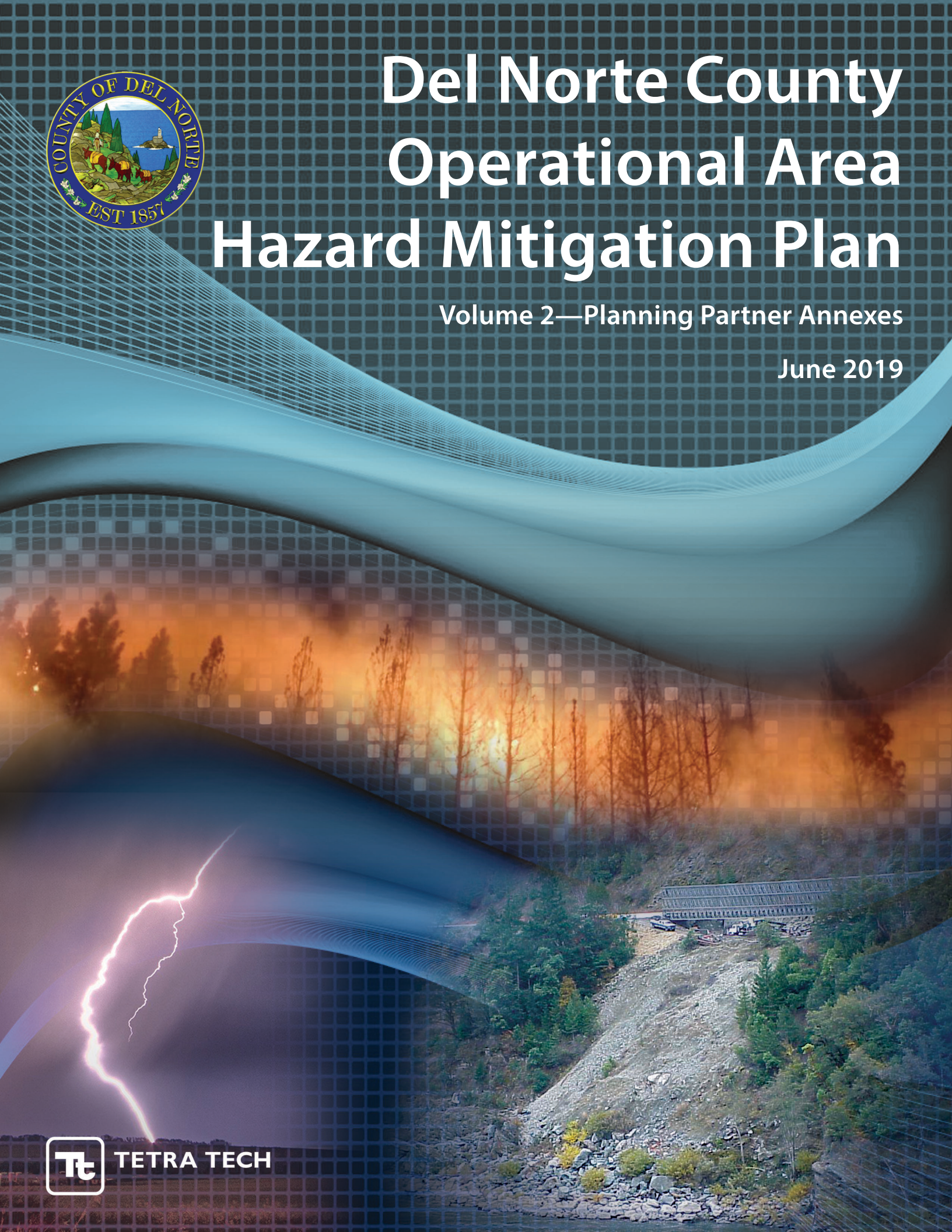
Del Norte County Operational Area Hazard Mitigation Plan

Volume 2—Planning Partner Annexes

June 2019



TETRA TECH

Del Norte County Operational Area Hazard Mitigation Plan

Volume 2—Planning Partner Annexes

June 2019

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Appendix C. Annex Instructions and Templates
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INTRODUCTION

BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

> "Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan." (Section 201.6(a)(4)).

For the Del Norte County Operational Area Hazard Mitigation Plan, a planning partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act for as many eligible local governments as possible. The Disaster Mitigation Act defines a local government as follows:

> "Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity."

In addition, federally recognized tribes may participate in local/tribal multi-jurisdictional plans as long as the requirements of Section 201.7 of 44 CFR are met for tribal components of the plan.

Three types of planning partners participated in this process for the Del Norte County Operational Area Hazard Mitigation Plan, with distinct needs and capabilities:

- Incorporated municipalities (the City of Crescent City and Del Norte County)
- Tribal government (Elk Valley Rancheria)
- Special purpose districts (seven districts throughout the county).

Each participating planning partner prepared a jurisdiction-specific annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume.

THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

The planning team solicited the participation of all eligible municipalities and special purpose districts at the outset of this project. A kickoff meeting was held on July 13, 2017 to identify potential stakeholders and planning partners for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort. All eligible local governments in the

planning area—16 total including prior and potential planning partners—were invited to attend. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Review the 2010 Crescent City/Del Norte County Hazard Mitigation Plan and planning partnership
- Outline the work plan for this hazard mitigation plan.
- Describe the benefits of multi-jurisdictional planning.
- Outline planning partner expectations.
- Solicit planning partners.
- Solicit volunteers/recommendations for the steering committee.

Local governments wishing to join the planning effort were asked to provide the planning team with a "letter of intent to participate" that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, the planning team received formal commitment from nine planning partners in addition to the County. A map showing the location of participating partners is provided at the end of this introduction. Additional maps are provided in the individual annexes of the City of Crescent City, Del Norte County and Elk Valley Rancheria, showing risk assessment results for each of those entities. The County's annex includes the risk assessment maps for all planning areas defined for this plan except Crescent City and Elk Valley.

Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were provided and discussed at the kickoff meeting (see Appendix A for details):

- Complete a "letter of intent to participate."
- Designate a lead point of contact for this effort.
- Support and participate in the selection and function of the Steering Committee.
- Provide support required to implement the public involvement strategy.
- Participate in the process through opportunities such as:
    - Steering Committee meetings
    - Public meetings or open houses
    - Workshops and planning partner specific training sessions
    - Public review and comment periods prior to adoption.
- Attend the mandatory jurisdictional annex workshop.
- Complete the jurisdictional annex.
- Perform a "consistency review" of all technical studies, plans and ordinances specific to hazards.
- Review the risk assessment and identify hazards and vulnerabilities specific to the jurisdiction.
- Review and determine if the mitigation recommendations chosen in Volume 1 will meet the needs of the jurisdiction.
- Create an action plan that identifies each project, who will oversee the task, how it will be financed, and when it is estimated to occur.
- Formally adopt the hazard mitigation plan.

By adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume 1. Failure to meet these criteria may result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

Linkage Procedures

Eligible local jurisdictions that did not participate in development of this multi-jurisdictional plan may comply with Disaster Mitigation Act requirements by linking to this plan following procedures outlined in Appendix B.

ANNEX-PREPARATION PROCESS

Templates

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. Separate templates were created for the three types of jurisdictions participating in this plan. The templates were created so that all criteria of Section 201.6 of 44 CFR for local governments would be met and all criteria of Section 201.7 of 44 CFR would be met for the tribal government, based on the partners' capabilities and mode of operation. Separate templates were available for partners updating a previous hazard mitigation plan and those developing a first-time hazard mitigation plan. The templates were set up to lead all partner through steps to generate Disaster Mitigation Act-required elements specific to their jurisdictions. The templates and their instructions are included in Appendix C of this volume.

Tool Kit

Each planning partner was provided with a tool kit to assist in completing the annex template and developing an action plan. The tool kits contained the following:

- The 2010 Crescent City/Del Norte County Hazard Mitigation Plan Annexes
- The 2017 Big Rock Community Services District Hazard Mitigation Plan
- A catalog of mitigation best practices and adaptive capacity
- The guiding principle, goals and objectives developed for the update to the plan
- A list of jurisdiction-specific issues noted during the risk assessment
- Information on the FEMA Hazard Mitigation Assistance grant program
- Information on past hazard events that have impacted the planning area
- County-wide and jurisdiction-specific maps for hazards of concern
- Special district boundary maps showing the sphere of influence for each special purpose district partner
- The risk assessment results developed for this plan
- Information on climate change and expected impacts in the planning area
- Jurisdiction-specific annex templates, with instructions for completing them
- FEMA guidance on plan integration
- The results of a public survey conducted as part of the public involvement strategy
- A copy of the presentation that was given at the workshop sessions.

Workshop

All partners were required to participate in a technical assistance workshop, where key elements of the template were discussed and the templates were subsequently completed by a designated point of contact for each partner and a member of the planning team. The workshop, held during the February 15, 2018 steering committee meeting and attended by at least one representative from each planning partner, addressed the following topics:

- The templates and the tool kit
- Natural events history
- Jurisdiction-specific issues
- Risk ranking

- Status of prior actions
- Developing your action plan
- Cost/benefit review
- Prioritization protocol
- Next steps.

MITIGATION ACTION PLAN DEVELOPMENT

Risk Ranking

In the risk-ranking exercise, each planning partner was asked to review the ranked risk specifically for its jurisdiction, based on the impact on its population and/or facilities. Municipalities based this ranking on probability of occurrence and the potential impact on people, property and the economy. Special purpose districts based this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities and the facilities' functionality after an event. The methodology followed that used for the countywide risk ranking presented in Volume 1. The objectives of this exercise were to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" and "medium" for each jurisdiction as a result of this exercise were considered to be priorities for identifying mitigation actions, although jurisdictions also identified actions to mitigate "low" ranked hazards, as appropriate.

Information Reviewed to Develop Action Plan

The tool kits were used during the workshops and in follow-up work conducted by the planning partners. A large portion of the workshop focused on how the tool kit should be used to develop the mitigation action plan. Planning partners were specifically asked to review the following to assist in the identification of actions:

- **The Jurisdiction's Capability Assessment—**Reviewed to identify capabilities that the jurisdiction does not currently have but should consider pursuing or capabilities that should be revisited and updated to include best available information; also reviewed to determine how existing capabilities can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- **The Jurisdiction's National Flood Insurance Program Compliance Table**—Reviewed to identify opportunities to increase floodplain management capabilities.
- **The Jurisdiction's Review of Its Adaptive Capacity for Climate Change**—Reviewed to identify ways to leverage or continue to improve existing capacities and to improve understanding of other capacities.
- **The Jurisdiction's Identified Opportunities for Future Integration**—Reviewed to identify specific integration actions to be included in the mitigation strategy.
- **Jurisdiction-Specific Vulnerabilities—**Reviewed to identify actions that will help reduce known vulnerabilities.
- **The Mitigation Best Practices Catalog**—Reviewed to identify actions that the jurisdiction should consider including in its action plan.
- **Public Input**—Reviewed to identify potential actions and community priorities.

Prioritization

44 CFR requires actions identified in the action plan to be prioritized (Sections 201.6(c)(3)(iii) and 201.7(c)(3)(iii)). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44 CFR. All identified actions were prioritized in two categories—implementation and grant pursuit—as defined by the following criteria:

- Implementation priority

  - **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

- Grant pursuit priority

  - **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

These priority definitions are dynamic and can change from one category to another based on changes to a parameter such as availability of funding. For example, a project might be assigned a medium priority because of the uncertainty of a funding source, but be changed to high priority once a funding source has been identified. The 2010 plan used the same method of prioritization for implementation priority as was used in this plan update. The grant pursuit priority is a newly added prioritization schedule. The prioritization schedule for this plan will be reviewed and updated as needed annually through the plan maintenance strategy.

Benefit/Cost Review

44 CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. Because some actions may not be implemented for up to 10 years, benefit/cost analysis was qualitative and not of the detail required by FEMA for project grant eligibility under the Hazard Mitigation Assistance (HMA) grant program. A review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to benefits and costs as follows:

- Benefit ratings:

  - **High—**The action will have an immediate impact on the reduction of risk exposure to life and property.
  - **Medium**—The action will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
  - **Low—**Long-term benefits of the action are difficult to quantify in the short-term.

- Cost ratings:

- **High—**Existing funding levels are not adequate to cover the costs of the proposed action; implementation would require an increase in revenue through an alternative source (for example, bonds, grants, and fee increases).
- **Medium—**The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- **Low—**The action could be funded under the existing budget. The action is part of or can be part of an existing, ongoing program.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

For many of the strategies identified in this action plan, funding might be sought under FEMA's HMA program. This program requires detailed benefit/cost analysis as part of the application process. These analyses will be performed on projects at the time of application preparation. The FEMA benefit-cost model will be used to perform this review. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Partners reserve the right to define "benefits" according to parameters that meet their needs and the goals and objectives of this plan.

Analysis of Mitigation Actions

All planning partners reviewed their recommended actions to classify each action based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future-conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

These categories include categories identified in the Community Rating System (CRS) 2017 *CRS Coordinators Manual* (OMB No. 1660-0022, Figure 510-4). The CRS categories expand on the four categories in FEMA's

2013 *Local Mitigation Handbook*. They provide a more comprehensive range of options, thus increasing integration opportunities.

In addition to the CRS categories, two other categories were included in the analysis. The climate resilient category was added to facilitate the incorporation of climate adaptation planning into hazard mitigation plans in accordance with California Senate Bill 379 (see Section 4 in Volume 1 of this plan). Community capacity building was added to clearly identify opportunities for expanding on existing capabilities.

COMPATIBILITY WITH PREVIOUS APPROVED PLANS

Seven of the planning partners who participated in this plan were previously covered under the 2010 Crescent City/Del Norte County Hazard Mitigation Plan, which has expired. One of these partners, the Big Rock Community Services District, has since adopted its own updated plan, but chose to also participate in and be covered by this new multi-jurisdictional plan update. Three other partners had no previous coverage. One district covered by the 2010 plan chose not to participate in the process for this update. Table 1 lists all the partners and the role this multi-jurisdictional plan will play in achieving compliance.

Table 1. Prior Plan and Planning Partner Status

	Covered by 2010 Plan?	FEMA Approval Date	Letter of Intent Date	Attended Workshop ?	Completed Template?	Will Be Covered by this Multi-Jurisdictional Hazard Mitigation Plan?
Del Norte County	Yes	2/15/2011	N/A [a]	Yes	Yes	Yes
City of Crescent City	Yes	2/15/2011	4/6/2016	Yes	Yes	Yes
Elk Valley Rancheria	No	N/A	12/12/2017	Yes	Yes	Yes
Big Rock Community Services District	Yes	12/15/2017[b]	8/13/2017	Yes	Yes	Yes
Crescent Fire Protection District	No	N/A	10/10/2017	Yes	Yes	Yes
Crescent City Harbor District	Yes	2/15/2011	10/23/2017	Yes	Yes	Yes
Gasquet Community Services District	No	N/A	8/29/2017	Yes	Yes	Yes
Klamath Community Services District	No	N/A	12/20/2017	Yes	Yes	Yes
Smith River Community Services District	Yes	2/15/2011	8/24/17	Yes	Yes	Yes
Smith River Fire Protection District	Yes	2/15/2011	12/7/2017	Yes	Yes	Yes
Del Norte County Library District	Yes	2/15/2011	N/A	N/A	N/A	No

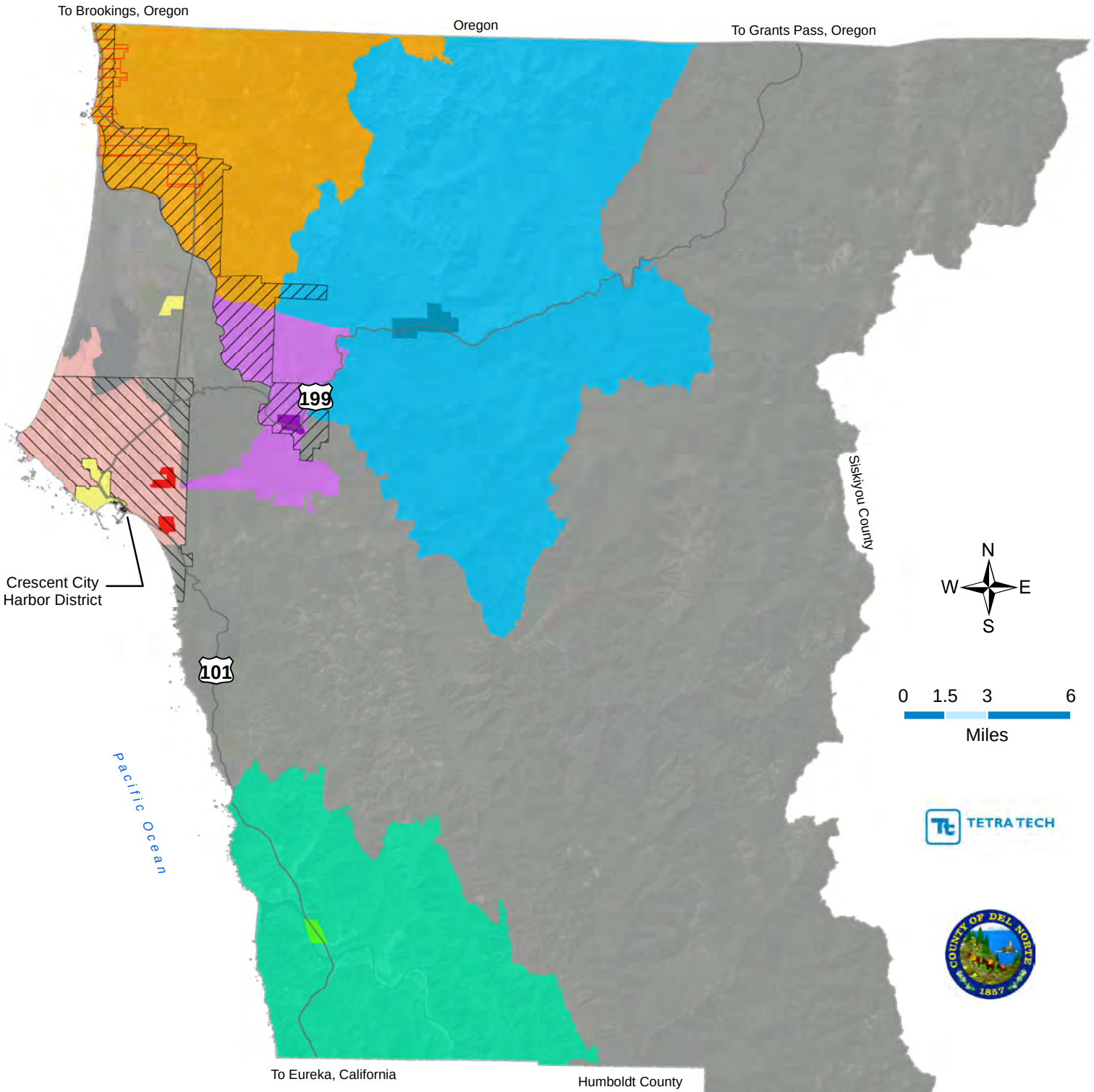
a. No letter of intent was submitted as the County was the project sponsor
b. In order to retain funding for the Hillside Stabilization Project, a critical mitigation project designed to secure the District's main water storage tank facility from failure during a small-to-moderate earthquake, the District required an approved hazard mitigation plan update before the Del Norte planning update process was complete.

FINAL COVERAGE UNDER THE PLAN

All planning partners that submitted letters of intent to participate fully met the participation requirements for this update. Table 1 lists the jurisdictions that submitted letters of intent and their ultimate status in this plan.

Del Norte County

Planning Units & Special Districts



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Del Norte County Boundary

Special District

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

Planning Unit

- Crescent City Limits
- Crescent City UGA
- Elk Valley Rancheria
- Gasquet
- Hiouchi
- Klamath
- Smith River
- Unincorporated County

Map Data Sources: Del Norte County, Caltrans, ESRI, State of California

This map is for informational purposes only.

ACRONYMS

The following acronyms are used throughout the annexes in this volume:

- AFG—Assistance to Firefighters Grant Program
- BIA—Bureau of Indian Affairs
- Cal OES—California Office of Emergency Services
- CCFR —Crescent City Fire & Rescue
- CCHD—Crescent City Harbor District
- CDBG—Community Development Block Grant
- CDD—Community Development Department
- CDWR—California Department of Water Resources
- CFPD—Crescent Fire Protection District
- COOP/COG—Continuity of Operations and Continuity of Government
- DNCC—Del Norte County Code
- EMPG—Emergency Management Performance Grants
- EVR—Elk Valley Rancheria
- FAA—Federal Aviation Administration
- FHWA—Federal Highway Administration
- FMA—Flood Mitigation Assistance Grant Program
- FMAG—Fire Management Assistance Grant Program
- GCSD—Gasquet Community Services District
- IHS—Indian Health Service
- HDPE—High-density polyethylene
- HMA—Hazard Mitigation Assistance
- HMGP—Hazard Mitigation Grant Program
- HSGP—Homeland Security Grant Program
- NOAA—National Oceanic and Atmospheric Administration
- NRCS—Natural Resources Conservation Service
- PA (C-G)—Public Assistance Categories C through G
- PDM—Pre-Disaster Mitigation
- PVC—Polyvinyl chloride
- SAFECOM—U.S. Department of Homeland Security program for emergency communications interoperability
- SAFER—Staffing for Adequate Fire & Emergency Response Grants
- SCADA—Supervisory control and data acquisition
- SRCSD—Smith River Community Services District
- SRFPD—Smith River Fire Protection District
- TDN—Tolowa Dee-ni’ Nation
- USDA—U.S. Department of Agriculture

1. UNINCORPORATED DEL NORTE COUNTY

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Cindy Henderson, Emergency Services Manager
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Crescent City, CA 95531
Telephone: 707-465-0430
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Alternate Point of Contact
Jay Sarina, County Administrative Officer
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Crescent City, CA 95531
Telephone: 707-464-7204
e-mail Address: jsarina@co.del-norte.ca.us

1.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—1857
- **Current Population**—27,124 (2017 California Department of Finance)
- **Population Growth**—While the population of California has grown by an annual rate ranging between 0.7% and 1.0% between 2012 and the date of this report population growth in Del Norte County has lagged behind the State's growth with annual growth rates ranging from 0.2% (2012) to -2.7% (2016) and most recently -0.5% in 2017 (2017 Department of Finance).
- **Location and Description**—Del Norte County is approximately 350 miles north of San Francisco located along U.S. Highway 101, at the far northwest corner of the state and represents the border between the states of Oregon and California, along the coast. The county has a total area of 1,230 square miles, of which 222 square miles (18.05 percent) is water. Two National Forests, the Six Rivers and Rogue River-Siskiyou, are partially located within Del Norte County. The Six Rivers National Forest includes the Smith River National Recreation Area which is managed by the United States Forest Service as well as portions of the Siskiyou Wilderness. The county is home to a portion of the Redwood National and State Parks which include the Del Norte Coast Redwoods State Park and Jedediah Smith State Park; in addition, the county is home to the Tolowa Dunes State Park, Ruby Van Deventer County Park, and Florence Keller County Park. Nearly 80 percent of the land mass in Del Norte County is owned by public entities including federal, state, and local governments as well as federally recognized tribes. There is one incorporated city, Crescent City (the county seat), located in the county as well as several unincorporated communities including Big Flat/Rock Creek, Fort Dick, Gasquet, Hiouchi, Klamath, and Smith River.
- **Brief History**—The area was first explored by the pioneer Jedediah Smith in the early 1800s. He was the first American to reach the area overland on foot in a time before anything was known about such a distant territory. For him it was literally "Land's End" or where the American continent ended at the Pacific Ocean. In 1855 Congress authorized the building of a lighthouse at "the Battery Point" (a high tide island on the coast of Crescent City) which is still functioning as a historical landmark. Del Norte County was founded in 1857, from part of the territory of Klamath County following the great California Gold Rush. Klamath County ceased to exist in 1874.

- **Climate**—Temperatures range from 40ºF to 60ºF year-round along the redwood coastline. Redwoods rely on the fog that envelops the coast in the summer. Summers are mild with warmer temperatures inland. Winters are cool with considerable precipitation. Average high temperature is 54ºF in the winter and 65ºF in the summer. Average low temperature is 40ºF in the winter and 50ºF in the summer. Average annual rainfall is 66 inches.
- **Governing Body Format**—Del Norte County is a general law county. The Board of Supervisors, which serves as the legislative and executive body for the county and many special districts, consists of five full-time members with one member elected from each district. Pursuant to the California Government Code, the Board enacts legislation governing Del Norte County, determines overall policies for County departments, adopts the annual budget and fixes salaries. The Del Norte County Board of Supervisors assumes responsibility for the adoption of this plan and the Del Norte County Office of Emergency Services, in coordination with other local agencies, will oversee its implementation.

1.3 DEVELOPMENT TRENDS

Development in Del Norte County has generally lagged behind statewide building and construction trends in the post 2008 recession era; however, development is occurring at a more frequent rate than during the recession period with an increasing number of new housing starts and some commercial activity. Of particular note is the commencement of construction of a new passenger terminal at the Crescent City Regional Airport (aka Jack McNamara Field), a new commercial retail store in Smith River, several residential subdivision map approvals, and various new projects by federally recognized tribes including a new hotel and casino in Klamath, and public road and sewer improvement projects by the Tolowa Dee-ni' Nation in Smith River. The county has adopted critical-area and resource-land regulations pursuant to the state planning law and the California Coastal Act. These processes govern land use decision and policy making in the County.

Table 1-1 summarizes development trends in the performance period since development of the previous hazard mitigation plan and expected future development trends.

Table 1-1. Recent and Expected Future Development Trends

Criterion	Response						
Has your jurisdiction annexed any land since the development of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	No N/A						
Is your jurisdiction expected to annex any areas during the performance period of this plan? • If yes, please describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	No N/A N/A						
Are any areas targeted for development or major redevelopment in the next five years? • If yes, please briefly describe, including whether any of the areas are in known hazard risk areas	No N/A						
How many permits for new construction were issued in your jurisdiction since the development of the previous hazard mitigation plan?		2013	2014	2015	2016	2017	
	Residential Units (single or multi-family)	30	11	29	24	34	
	Other (commercial, mixed use, etc.)	N/A	N/A	N/A	N/A	N/A	

Criterion	Response
Please provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	Approximately ten building permits have been issued for projects located in special flood hazard areas as mapped by FEMA's NFIP flood maps. In each case, the permit application is required to include both a pre-construction and post-construction flood elevation certificate prepared by a licensed civil engineer or land surveyor in order to determine whether the location of the project is at or above the 1-percent annual chance (aka 100-year) flood zone elevation. In each case the certificate prepared for each of the ten projects indicated that the project was in conformance with the standards of the adopted Flood Damage Prevention Ordinance. The preponderance of developable land in the County is located within the State Responsibility Area (SRA) and is mapped as a Medium, High, or Very High fire hazard severity zone. In each of those wildfire risk areas the County imposes Fire Safe Regulations that have been adopted in consultation with CAL FIRE in order to minimize exposure this risk. Standards for development in the SRA may include fire resistant construction materials, increased setbacks, fuels maintenance, etc. The only areas in which substantial development has taken place, outside of the SRA, is in the unincorporated Crescent City and town of Smith River areas. The County Building Inspection Division estimate that approximately 75% of the total residential development identified in this section is located in the SRA and was, therefore, subject to SRA regulations as part of the permitting process.
Please describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	More than adequate land remains available to accommodate the county's needs for future development. Cyclically, the California Department of Housing and Community Development determines a Regional Housing Need Allocation that identifies the number of new housing units that the local agency must plan for based on social and demographic factors (i.e. population growth, age, income, etc.). Del Norte County has responded to the Regional Housing Need Allocation, via the adopted Housing Element, and has demonstrated that sufficient land exists to accommodate the housing needs of the community over the planning period. In addition, there are numerous vacant parcels zoned commercial, manufacturing, and industrial to accommodate those development needs.

1.4 CAPABILITY ASSESSMENT

Del Norte County has performed an inventory and analysis of existing capabilities, plans, programs and policies that enhance its ability to implement mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities is presented in Table 1-2.
- Development and permitting capabilities are presented in Table 1-3.
- An assessment of fiscal capabilities is presented in Table 1-4.
- An assessment of administrative and technical capabilities is presented in Table 1-5.
- An assessment of education and outreach capabilities is presented in Table 1-6.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-7.
- Classifications under various community mitigation programs are presented in Table 1-8.
- The community's adaptive capacity for the impacts of climate change is presented in Table 1-9.

Table 1-2. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	Yes	Yes	No
Comment: Del Norte County Code (DNCC) §14.04. State Housing and Community Development has building permit jurisdiction in licensed manufactured home/RV parks.				
Zoning Code	Yes	Yes	Yes	No
Comment: DNCC §20 and §21. Coastal zone (Title 21) jointly administered by County and CA Coastal Commission via Certified Local Coastal Program.				
Subdivisions	Yes	No	Yes	No
Comment: DNCC §16.				
Stormwater Management	Yes	Yes	Yes	No
Comment: DNCC §7.36.140, §12.04.080, §14.05.070, §20.47, §21.45, et al. Also regulated by North Coast Regional Water Quality Control Board.				
Post-Disaster Recovery	Yes	Yes	Yes	No
Comment: DNCC §2.60.				
Real Estate Disclosure	Yes	Yes	Yes	No
Comment: Community Development Department (CDD) provides natural hazard information for disclosure purposes to realtors as well as subdivision information to the Department of Real Estate for public records purposes.				
Growth Management	Yes	Yes	No	No
Comment: See zoning chapter of County Code.				
Site Plan Review	Yes	No	No	No
Comment: DNCC §22.04.				
Environmental Protection	Yes	No	Yes	No
Comment: DNCC §20.39, §21.11, §22.04, et al.				
Flood Damage Prevention	Yes	Yes	Yes	No
Comment: DNCC §20.38, §20.40, §20.42, §20.47, §21.37-39, and §21.45.				
Emergency Management	Yes	Yes	Yes	No
Comment: DNCC §2.60.				
Climate Change	No	Yes	No	No
Comment: Del Norte County is subject to greenhouse gas regulations adopted by the California Air Resources Board and the North Coast Unified Air Quality Management District.				
Other:	N/A	N/A	N/A	N/A
Comment:				
Planning Documents				
General Plan	Yes	Yes	Yes	No
Is the plan compliant with Assembly Bill 2140? Yes				
Comment: Del Norte County Resolution 2011-061.				
Capital Improvement Plan	Yes	No	No	No
How often is the plan updated? As needed.				
Comment: Updated in 2006.				
Floodplain or Watershed Plan	Yes	Yes	Yes	No
Comment: Del Norte County General Plan (Sec. 2-4).				
Stormwater Plan	Yes	Yes	Yes	No
Comment: Del Norte County General Plan (Sec. 1-3 and 7-7).				
Urban Water Management Plan	No	No	No	No
Comment: N/A				
Habitat Conservation Plan	No	No	No	No
Comment: The Del Norte County General Plan (Sec. 1 and Sec. 3) includes habitat conservation policies and programs directed towards protection of endangered species.				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Economic Development Plan	Yes	Yes	Yes	No
Comment: Del Norte County General Plan (Sec. 3-22).				
Shoreline Management Plan	Yes	Yes	No	No
Comment: Del Norte County Local Coastal Program.				
Community Wildfire Protection Plan	Yes	Yes	No	Yes
Comment: Del Norte County Fire Safe Council, Del Norte County Fire Safe Plan (2005).				
Forest Management Plan	Yes	Yes	No	No
Comment: Del Norte County General Plan (Sec. 1-16).				
Climate Action Plan	No	Yes	No	No
Comment: AB 32 sets targets for greenhouse gas reduction. Revisions to CEQA guidelines per SB 375 will require additional greenhouse gas analysis.				
Comprehensive Emergency Management Plan	Yes	No	Yes	Yes
Comment: Last updated May 2005.				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	No	No	No
Comment: N/A				
Post-Disaster Recovery Plan	No	No	No	No
Comment: Recovery Operations Organization is a section within the Comprehensive Emergency Management Plan (see above).				
Continuity of Operations Plan	No	No	No	No
Comment: N/A				
Public Health Plan	Yes	Yes	Yes	No
Comment: Del Norte Health and Human Services Disaster Response Plan for Del Norte Operational Area (2005)				
Other:	Yes	No	Yes	No
Comment: Airport Land Use Compatibility Plan (2017).				

Table 1-3. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? • If no, who does? If yes, which department?	Yes CDD/Building Inspection Division.
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No

Table 1-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use? (Yes/No/Don't Know)
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes. User fees for sewer service (CSA Area #1)
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	Yes. Federally-sponsored grant programs (e.g. FEMA, etc.).

Table 1-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	CDD / Director, Assistant Director, Engineering Division staff, and Planning Division staff.
Engineers or professionals trained in building or infrastructure construction practices	Yes	CDD / Engineering Division staff and Building Inspection Division staff.
Planners or engineers with an understanding of natural hazards	Yes	CDD / Director, Assistant Director, Engineering Division staff, and Planning Division staff.
Staff with training in benefit/cost analysis	Yes	Multiple Departments.
Surveyors	Yes	CDD / Engineering & Surveying Division staff.
Personnel skilled or trained in GIS applications	Yes	IT / GIS Coordinator. CDD / Planning Division staff.
Scientist familiar with natural hazards in local area	Yes	Department of Health and Human Services (DHHS) / Public Health Officer. CDD / Environmental Health Division staff.
Emergency Manager	Yes	Administration / CAO, Assistant CAO, Emergency Services Manager. Sherriff's Office / County Sherriff.
Grant writers	Yes	Multiple Departments.
Other	Yes	CDD / Roads Division (i.e. public works) staff.

Table 1-6. Education and Outreach Capability

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	Yes Emergency Services hosts information related to hazard mitigation on division website.
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	Yes Emergency Services maintains a social media presence (i.e. Facebook) for quick dissemination of hazard mitigation information.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly describe.	No N/A
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes Emergency Services collaborates with local media (i.e. newspaper, radio, etc.) for communication of hazard related information.
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	Yes Community alert system "Everbridge" can be deployed during hazard events for mass community notification as well as a tsunami siren.

Table 1-7. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	CDD
Who is your floodplain administrator? (department/position)	Director of CDD
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	May 26, 2009 (Ord. No. 2009-010)
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	2014
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, please state what they are.	No N/A
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, please state why.	Yes N/A
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	No N/A
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving CRS Classification? • Is your jurisdiction interested in joining the CRS program?	No N/A Yes
How many flood insurance policies are in force in your jurisdiction?[a] • What is the insurance in force? • What is the premium in force?	162 $40,829,900 $167,445
How many total loss claims have been filed in your jurisdiction?[a] • How many claims are still open/were closed without payment? • What were the total payments for losses?	35 0/11 $371,872

a. According to FEMA statistics as of December 31, 2017

Table 1-8. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	10	N/A
Public Protection	Fire Districts within the County participate	N/A	N/A
Storm Ready / Tsunami Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 1-9. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: *Del Norte County is a coastal community and, as such, attempts to stay informed on potential impacts related to climate change.*	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: *As a coastal community climate change, and sea level rise in particular, is of concern to the County. The County will continue to monitor potential impacts as well as identifying potentially beneficial adaptation strategies.*	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: *While capacity in this area is deemed low given the limited financial resources available climate change, and sea level rise in particular, is of concern to the County and, as such, CDD will continue to work to identify potentially beneficial adaptation strategies.*	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: *The state has been slow in providing technical assistance/guidance for North Coast communities related to greenhouse gas as the focus of the state's efforts seem to be concentrated in larger metropolitan planning organizations, urban areas, and non-attainment regions.*	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: *Most projects and land use decisions are subject to analysis under the California Environmental Quality Act (CEQA) and therefore must be assessed with regard to potential impacts related to climate change.*	
Participation in regional groups addressing climate risks	Low
Comment: *The County communicates with Coastal Commission regularly on climate related risks, notably sea level rise, however due to the remote location of Del Norte County there is not a defined regional conversation taking place with regard to climate change.*	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: *This is mandated by CEQA.*	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: *The state has been slow in providing technical assistance/guidance for north coast communities related to greenhouse gas as the focus of the state's efforts seem to be concentrated in larger metropolitan planning organizations, urban areas, and non-attainment regions.*	
Identified strategies for adaptation to impacts	Low
Comment: *The Coastal Commission has released a sea level rise policy guidance document.*	
Champions for climate action in local government departments	Medium
Comment: *County staff implement state and federal regulations related to climate change in permitting and project approval.*	
Political support for implementing climate change adaptation strategies	Low
Comment: *Climate change is a politically controversial topic in Del Norte County.*	
Financial resources devoted to climate change adaptation	Low
Comment: *Del Norte County has limited financial resources in all areas including essential and non-essential services.*	
Local authority over sectors likely to be negative impacted	Medium
Comment: *Del Norte County retains authority over most coastal areas however the Coastal Commission holds jurisdiction in certain tidally influenced areas, state trust lands, submerged lands, non-certified areas (i.e. areas that are likely to be negatively impacted by climate change).*	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Medium
Comment: *Mixed.*	
Local residents' support of adaptation efforts	Low
Comment: *Mixed.*	

Criterion	Jurisdiction Rating[a]
Local residents' capacity to adapt to climate impacts	Low
Comment: *Mixed.*	
Local economy current capacity to adapt to climate impacts	Low
Comment: *A significant concern to the local economy is the potential catastrophic failure of "Last Chance Grade" which would impede the transport of goods into and out of Del Norte County. According to the Local Transportation Commission, climate impacts may contribute to Last Chance Grade failing.*	
Local ecosystems capacity to adapt to climate impacts	Medium
Comment: *Del Norte County has not directly experienced the negative effects of climate change as acutely as other regions and local ecosystems are presently in a generally pristine and natural condition which may allow for them to adapt reasonably well to potential impacts.*	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

1.5 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

1.5.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, Del Norte County made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Del Norte County General Plan—**Ongoing programs related to reducing exposure to hazards including seismic, geologic, flood, fire, and hazardous materials.

1.5.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, Del Norte County will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan in actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Community Wildfire Protection Plan.** The Hazard Mitigation Plan may serve as the basis for a Community Wildfire Protection Plan by providing data and information that will assist in the identification of areas of concern throughout the county and prioritization of those areas where wildfire threat is greatest. Hazard mitigation efforts can then be focused to address specific issues in the areas of greatest concern as well as identifying areas for fuels management and reduction projects; and
- **Comprehensive Emergency Management Plan.** The Comprehensive Emergency Management Plan may be updated to include risk assessment data collected as part of the development of the hazard mitigation plan in order to best address current needs and risk exposure.

1.6 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-10 lists past occurrences of natural hazards for which specific damage was recorded in Unincorporated Del Norte County. Other hazard events that broadly affected the entire planning area, including Unincorporated Del Norte County, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-10. Past Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Wildland Fire(s)	N/A	Summer 2017	N/A
Severe Storm, flooding, wind	DR-4308	February 2017	$6,502,500
Severe Storm, Flooding	N/A	December 2016	$9,260,000
Wildland Fire(s)	N/A	Summer 2015	N/A
Severe Storm, flooding, wind	N/A	10/13/2016	N/A
Tsunami	DR-1968	3/11/2011	N/A
Winter Storm, flooding	N/A	12/28/2008	N/A
Winter Storm	N/A	1/4/2008	N/A
Earthquake	N/A	2/26/2007	N/A
Tsunami	N/A	1/13/2007	N/A
Tsunami	N/A	11/15/2006	N/A
Earthquake	N/A	7/16/2006	N/A
Earthquake	N/A	3/25/2006	N/A
Severe Storms, flooding, landslides	DR-1628	2/3/2006	$7,650,000[a]
Earthquake	N/A	6/14/2005	N/A
Earthquake	N/A	8/15/2003	N/A
State Road damage	GP-2003	1/1/2003	N/A
Earthquake	N/A	6/17/2002	N/A
Earthquake	N/A	9/20/2001	N/A
Earthquake	N/A	1/13/2001	N/A
Earthquake	N/A	3/16/2000	N/A
El Nino Floods	DR-1203	2/9/1998	N/A
Severe storms, Flooding	DR-1155	1/4/1997	$15,150,000[a]
Severe Winter Storms	N/A	12/9/1995	$8,400,000[a]
Severe Winter storms	DR-1044	1/13/1995	N/A
Fishing Losses (El Nino effect)	DR-1038	9/20/1994	$30,300,000
Tsunami	N/A	9/1/1994	N/A
Earthquake	DR-943	4/25/1992	$17, 829,642[b]
Tsunami	N/A	4/25/1992	N/A
Wildland Fires (Lightning)	GP-1987	9/10/1987	$3,571,428[a]
Tsunami	N/A	5/7/1986	N/A
Severe Storms, Flooding	DR-758	2/18/1986	N/A
Winter Storms	DR-677	2/9/1983	N/A
Tsunami	N/A	10/3/1974	N/A
Severe Storms, Flooding	DR-329	4/5/1972	$6,817,618
Tsunami	N/A	7/26/1971	N/A

a. Hazards & Vulnerability Research Institute (2008). The Spatial Hazard Events and Losses Database for the United States, Version 6.2 [Online Database]. Columbia, SC: University of South Carolina. Available from http://www.sheldus.org

b. Total amount for all counties declared under the event.

1.7 HAZARD RISK RANKING

Table 1-11 presents a local ranking for Unincorporated Del Norte County of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 1-11. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake[a]	(3 x 12) = 36	High
2	Wildland fire[c]	(3 x 11) = 33	High
3	Landslide[e]	(3 x 9) = 27	Medium
3	Severe weather[b]	(3 x 9) = 27	Medium
4	Tsunami[i]	(3 x 8) = 24	Medium
5	Flooding[d]	(3 x 6) = 18	Medium
6	Drought[f]	(3 x 4) = 12	Low
6	Sea level rise[h]	(2 x 6) = 12	Low
7	Dam failure[g]	(1 x 6) = 6	Low

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on property and low impact on economy.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, low impact on property and medium impact on economy.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

1.8 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction.

1.8.1 Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 1
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 1

1.8.2 Other Noted Vulnerabilities

The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- **Flooding**
  - There are estimated to be 280 structures within the 1-percent annual chance flood hazard area, but there are only 162 flood insurance policies in force within the unincorporated areas of the county. Most of these structures are believed to be residential.
  - Andy McBeth Airport (a County-owned public use airport located in Klamath Glen) is located in the 1-percent annual chance flood hazard area.
- **Earthquake**
  - More than 65 percent of the housing stock was built before modern seismic codes were in force.
  - Many critical facilities are located in type D soils, which may be probe to liquefaction. These facilities include the Del Norte County Courthouse, Library, Offices, Road Department, Juvenile Hall, Agricultural Department, Drug and Alcohol Services, Health and Social Services Building, Sheriff's Office, among others.
- **Landslide**
  - More than 30 percent of the structures in Gasquet, Hiouchi, and Smith River are believed to be located in very high or high landslide susceptibility zones.
  - There are 10 County Highway Agency bridges believed to be located in very high or high landslide susceptibility zones.
- **Severe weather**
  - Power disruption can occur as a result of severe weather events.
- **Tsunami**
  - There are estimated to be more than 290 residences in tsunami inundation zones in the unincorporated areas of the county. In Klamath and Smith River approximately 12 and 17 percent of residences are in inundation zones, respectively.
  - There are a number of critical facilities located in tsunami inundation zones including the Del Norte County Courthouse, Library, Road Department, Juvenile Hall, Drug and Alcohol Services, and Sheriff's Office, among others
- **Wildland fire**
  - More than 95 percent of people in Gasquet and 70 percent of people in Hiouchi are estimated to reside in very high wildfire severity zones.
  - The Bar-O Boys Ranch is located in a very high severity wildfire zone.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 2.10.

1.9 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-12. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
DNC 1—Continue/enhance ongoing public education programs to include components on hazards and mitigations	☒	☐	☒	DNC-7
Comment: This is an ongoing action that the County will continue over the performance period of the 2018 plan.				
DNC 2—Update sponsored website to include preparedness, warning and mitigation information on all hazards	☐	☐	☒	DNC-8
Comment: In some respects, this project may be considered "complete" as much information has been posted to the website however this action is being carried over as the information included on the website is constantly being refined and updated based on our evolving understanding of disaster preparedness, warning, and mitigation (e.g. updates to FEMA flood maps, etc.).				
DNC 3—Provide updated narrowband radios and repeaters for all hazard first responders	☒	☐	☒	DNC-9
Comment: Prior action will be modified and carried forward (see Table 1-13). Narrowband radios have been purchased however there is still a need for repeaters.				
DNC 4—Engineering and feasibility study of critical facilities for structural and non-structural mitigation	☐	☐	☒	DNC-10
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 5—Cost/benefit analysis and feasibility study for the relocation or retro-fitting of the County jail facility	☐	☐	☒	DNC-11
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 6—Draft and adopt a post disaster action plan	☐	☐	☒	DNC-12
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 7—Develop, map, and communicate an evacuation route for all applicable hazards	☐	☐	☒	DNC-13
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 8—Engineer or retrofit new and existing roads and bridges to withstand hazards	☒	☐	☒	DNC-14
Comment: This is an ongoing action that the County will continue over the performance period of the 2018 plan.				
DNC 9—Develop a tsunami warning and response system	☐	☐	☒	DNC-15
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 10—Develop and implement a tsunami signage program	☒	☐	☐	N/A
Comment: This project was completed in phases during the prior planning periods with funding from the NOAA National Weather Service and Redwood Coast Tsunami Working Group.				
DNC 11—Develop tsunami inundation maps suitable for flood insurance risk use and make available to the public	☐	☒	☐	N/A
Comment: County Digital Flood Insurance Rate Maps were updated in 2017 and the risk from tsunami events was not considered in the mapping update. The County does not have the resources to conduct additional mapping.				
DNC 12—Design, post to the web and publicize the availability of a web GIS mapping tool providing detailed maps of natural hazard overlays or site address and/or parcel locations	☐	☐	☒	DNC-17
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 13—Identify and develop adequate locations for the temporary storage of post-disaster event debris.	☐	☐	☒	DNC-16
Comment: Prior action will be modified and carried forward (see Table 1-13).				

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
DNC 14—Secure funding for additional GIS-all hazards staffing capacity to provide interagency coordination and consolidated, integrated GIS capabilities including all county departs and other applicable agencies.	☐	☒	☒	DNC-18
Comment: Available funding was not identified over the performance period of the 2010 hazard mitigation plan.				
DNC 15—Retrofit airport runways to be able to receive larger aircrafts	☐	☐	☒	DNC-19
Comment: Prior action will be modified and carried forward (see Table 1-13). Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 16—Relocate/digitize County records	☐	☐	☒	DNC-20
Comment: Prior action will be modified and carried forward (see Table 1-13). Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 17—Establish alternate Office of Emergency Services operation center	☐	☐	☒	DNC-21
Comment: Prior action will be modified and carried forward (see Table 1-13). Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 18—Upgrade/develop redundant interoperable communications systems such as fiber optic wireless, radio and other.	☐	☐	☒	DNC-22
Comment: Resources were not available to complete this action during the performance period of the 2010 hazard mitigation plan.				
DNC 19—Maintain compliance and good standing within the National Flood Insurance Program (NFIP)	☒	☐	☒	DNC-4
Comment: Compliance and good standing in the program was maintained over the performance period of the 2010 plan and will continue to be maintained over the performance period of the 2018 plan.				
DNC 20—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.	☒	☐	☒	DNC-3
Comment: The County participated in the plan maintenance protocol in the 2010 plan through this update process and will continue to participate in the updated plan maintenance strategy.				
DNC 21—Support countywide initiatives identified in Volume 1.	☒	☐	☐	N/A
Comment: The County supported the countywide initiatives identified in the 2010 plan and will continue to support the updated initiatives identified in the 2018 plan.				

1.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-13 lists the actions that make up the Unincorporated Del Norte County hazard mitigation action plan. Table 1-14 identifies the priority for each action. Table 1-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-13. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
DNC-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire.						
Existing	3, 4, 10	Building Maintenance Department	Administration	High	HMGP, PDM, FMA	Short-term
DNC-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the General Plan, the Local Coastal Program, and the County Code.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, tsunami, wildland fire.						
New and Existing	1, 3, 4, 5, 7, 8, 10	Community Development Department	Office of Emergency Services	Low	Local funds	Ongoing
DNC-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire.						
New and Existing	1, 5, 8	Office of Emergency Services		Low	Local funds	Short-term
DNC-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements. Including, enforcement of the flood damage prevention ordinance; Participation in floodplain identification and mapping updates; and providing public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Dam failure, flooding, severe weather, tsunami, sea level rise.						
New and Existing	1, 3, 5, 7, 8, 10	Community Development Department	None	Low	Local funds	Ongoing
DNC-5—Identify and pursue strategies to increase adaptive capacity to climate change.						
Hazards Mitigated: Sea-level rise, wildfires, severe weather.						
New and Existing	1, 3, 4, 5, 6, 7, 8	Community Development Department	Office of Emergency Services	High	HMGP, FMA	Short-term
DNC-6—Purchase generators for critical facilities and infrastructure that lack adequate back-up power (e.g. sewer lift stations, etc.).						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	2, 6, 9	Community Development Department	Building Maintenance Department	High	HMGP, PDM	Long-term
DNC-7—Continue/enhance ongoing public education programs to include components on hazards and mitigations						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	5, 8	Office of Emergency Services		Medium	Local funds, HMGP	Ongoing
DNC-8—Update sponsored website to include preparedness, warning and mitigation information on all hazards						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
Existing	5, 8	Office of Emergency Services	Information Technology Department	Medium	Local funds	Short-term
DNC-9—Provide updated narrowband radios and repeaters for all hazard first responders						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 9	Office of Emergency Services	Information Technology Department	High	HMGP, EMPG, SAFECOM, Preparedness Grants	Long-term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
DNC-10—Conduct a structural/non-structural hazard mitigation engineering feasibility study of critical facilities/infrastructure identified as vulnerable to identify preferred alternatives for future grant funding opportunities. This would be considered a "phased-approach" as defined by FEMA under the 2015 HMA guidance						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	1, 2, 4, 6, 8, 9, 10	Administration	Building Maintenance Department	High	HMGP	Long-term
DNC-11—Conduct a cost/benefit analysis and feasibility study for the relocation or retro-fitting of the County jail facility						
Hazards Mitigated: Earthquake, tsunami.						
Existing	1, 2, 4, 6, 8, 9, 10	Administration	Building Maintenance Department	High	HMGP, PDM, FMA	Long-term
DNC-12—Draft and adopt a post disaster action plan						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 3, 6, 9	Office of Emergency Services	N/A	High	HMGP, EMPG, HSGP	Short-term
DNC-13—Develop, map, and communicate an evacuation route for all applicable hazards						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	5, 9	Office of Emergency Services	N/A	Medium	HMGP (5% initiative), EMPG, HSGP	Short-term
DNC-14—Engineer/design or retrofit new and existing roads and bridges to withstand the impacts from the hazards for which they are exposed.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, sea level rise, severe weather, tsunami.						
New and Existing	1, 3, 6, 7, 8, 10	Community Development Department	N/A	High	HMGP, PDM, FMA	Long-term
DNC-15—Develop a tsunami warning and response system						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	5, 9	Office of Emergency Services	N/A	High	HMGP, PDM, FMA, EMPG, HSGP, NOAA grants	Short-term
DNC-16—Develop a Disaster Debris Management Plan that Identifies and develops adequate locations for the temporary and permanent storage of post-disaster event debris. Establish agreements with property owners and haulers ahead of disaster.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New	2, 6, 8, 9	Office of Emergency Services	Community Development Department	Medium	HMGP, EMPG, HSGP	Long-term
DNC-17—Design, post to the web and publicize the availability of a web GIS mapping tool providing detailed maps of natural hazard overlays or site address and/or parcel locations						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	1, 5	Office of Emergency Services	Information Technology Department	Medium	HMGP, local funds	Short-term
DNC-18—Secure funding for additional GIS all hazards staffing capacity to provide interagency coordination and consolidated, integrated GIS capabilities including all county departments and other applicable agencies.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	1, 5, 8, 9	Office of Emergency Services	Information Technology Department	High	HMGP, PDM, FMA	Long-term
DNC-19—Extend runway lengths, draft a pavement maintenance plan, and rehabilitate pavement to be able to receive larger aircrafts.						

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 3, 4, 6, 8, 9	Border Coast Regional Airport Authority	N/A	High	HMGP, FAA grants	Long-term
DNC-20—Relocate/digitize County records and maintain backups that can be accessed during or soon following disaster events.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 4, 9	Information Technology Department	Building Maintenance Department	High	HMGP, local funds	Long-term
DNC-21—Establish alternate Office of Emergency Services operation center and emergency dispatch center.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 6, 9	Office of Emergency Services	Sheriff's Office	High	HMGP, EMPG, HSGP, local funds	Long-term
DNC-22—Upgrade/develop redundant interoperable communications systems such as fiber optic wireless, radio and other.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 6, 9	Office of Emergency Services	Information Technology Department	High	HMGP, PDM, FMA, HSGP, AFG, SAFECOM	Long-term
DNC-23—Procure equipment necessary to evaluate, repair, and maintain segments of the sewage collection system which are highly vulnerable to damage during disaster events.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 4, 6, 8	Community Development Department	N/A	High	HMGP, PDM, FMA, USDA Rural Development	Long-term
DNC-24—Develop County Service Area No. 1 Capital Improvement Program with the intent of prioritizing repair/replacement projects based on risk to hazards.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 4, 6, 8	Community Development Department	N/A	Medium	HMGP, PDM, FMA	Long-term
DNC-25—Identify and evaluate potential permanent relocation sites for critical county facilities located in areas subject to hazards.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 4, 6, 8, 9	Office of Emergency Services	Administration	Medium	HMGP, PDM, FMA	Long-term
DNC-26—Procure equipment necessary to maintain the County's flood control system and to remove obstacles from emergency access routes during disaster events.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
New and Existing	2, 4, 6, 8	Community Development Department	N/A	High	HMGP, PDM, FMA	Long-term
DNC-27—Replace or expand Bar O Boys Ranch barracks to accommodate fire crews.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, sea level rise, severe weather, tsunami, wildland fire.						
Existing	2, 3, 4, 6, 9	Administration, Probation Department	Building Maintenance Department	High	HMGP, PDM, FMA, SRS Title III funds, AFG	Long-term
DNC-28—Maintain airport runway safety areas to keep clear of wildfire fuels and to continue use as base for firefighting operations when needed.						
Hazards Mitigated: Wildland fire.						
Existing	2, 3, 4, 6, 9	Border Coast Regional Airport Authority	Office of Emergency Services	High	HMGP, PDM, FMA	Ongoing

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
DNC-29—Procure equipment necessary for operations at Jack McNamara Field to respond to disaster events on-site and as a critical ingress/egress point for the County.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire.						
New and Existing	2, 3, 4, 6, 9	Border Coast Regional Airport Authority	Office of Emergency Services	High	HMGP, PDM, FMA	Long-term

Table 1-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
DNC-1	3	High	High	Yes	Yes	No	Medium	High
DNC-2	7	Medium	Low	Yes	No	Yes	High	Low
DNC-3	3	Low	Low	Yes	No	Yes	High	Low
DNC-4	6	Medium	Low	Yes	No	Yes	High	Low
DNC-5	7	Medium	High	No	Yes	No	Low	Low
DNC-6	3	High	High	Yes	Yes	No	Medium	High
DNC-7	2	Low	Low	Yes	Yes	Yes	Medium	Low
DNC-8	2	Low	Low	Yes	No	Yes	Low	Low
DNC-9	2	High	High	Yes	Yes	No	Medium	Medium
DNC-10	7	High	High	Yes	Yes	No	Medium	High
DNC-11	7	High	High	Yes	Yes	No	Medium	Medium
DNC-12	4	High	High	Yes	Yes	No	High	High
DNC-13	2	High	Medium	Yes	Yes	No	High	High
DNC-14	6	High	High	Yes	Yes	No	Low	Low
DNC-15	2	High	High	Yes	Yes	No	Medium	Medium
DNC-16	4	Medium	Medium	Yes	Yes	No	Medium	Medium
DNC-17	2	Medium	Medium	Yes	Yes	No	Low	Low
DNC-18	4	Medium	High	No	Yes	No	Low	Low
DNC-19	6	Medium	High	No	Yes	No	Low	Low
DNC-20	3	Medium	High	No	Yes	No	Low	Low
DNC-21	3	High	High	Yes	Yes	No	Low	Low
DNC-22	3	High	High	Yes	Yes	No	Medium	High
DNC-23	4	High	High	Yes	Yes	No	Medium	Medium
DNC-24	4	High	Medium	Yes	Yes	No	High[b]	High
DNC-25	5	High	Medium	Yes	Yes	No	Medium	Medium
DNC-26	4	High	Medium	Yes	Yes	No	High[b]	High
DNC-27	5	Medium	High	No	Yes	No	Low	Low
DNC-28	5	High	High	Yes	Yes	No	High	High
DNC-29	5	High	High	Yes	Yes	No	Medium	Low

a. See the introduction to this volume for explanation of priorities.
b. Although this action may not be able to be completed within the performance period of the plan, it has been identified as a high priority for implementation.

Table 1-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Earthquake	DNC-2, DNC-23, DNC-24	DNC-11, DNC-19	DNC-7, DNC-8, DNC-13, DNC-17	DNC-2	DNC-9, DNC-21, DNC-22, DNC-29	DNC-1, DNC-10, DNC-11, DNC-14		DNC-6, DNC-12, DNC-16, DNC-20, DNC-25
Wildland fire	DNC-2	DNC-19, DNC-27, DNC-28	DNC-7, DNC-8, DNC-13, DNC-17	DNC-2	DNC-9, DNC-21, DNC-22, DNC-27, DNC-28, DNC-29	DNC-1, DNC-10, DNC-11, DNC-27, DNC-28	DNC-5	DNC-6, DNC-12, DNC-16, DNC-20, DNC-25, DNC-27
Landslide	DNC-2, DNC-23, DNC-24	DNC-19	DNC-7, DNC-8, DNC-13, DNC-17	DNC-2	DNC-9, DNC-21, DNC-22, DNC-29	DNC-1, DNC-10, DNC-11		DNC-6, DNC-12, DNC-16, DNC-20, DNC-25
Severe weather	DNC-23, DNC-24	DNC-19	DNC-7, DNC-8, DNC-13, DNC-17		DNC-9, DNC-21, DNC-22, DNC-29	DNC-10, DNC-14	DNC-5	DNC-6, DNC-12, DNC-20, DNC-25
Tsunami	DNC-2, DNC-24	DNC-11, DNC-19	DNC-7, DNC-8, DNC-13, DNC-15, DNC-17	DNC-2	DNC-9, DNC-15, DNC-21, DNC-22, DNC-29	DNC-1, DNC-10, DNC-11, DNC-14		DNC-6, DNC-12, DNC-16, DNC-20, DNC-25
Flooding	DNC-2, DNC-4, DNC-23, DNC-24	DNC-4, DNC-19	DNC-4, DNC-7, DNC-8, DNC-13, DNC-17	DNC-2	DNC-9, DNC-21, DNC-22, DNC-29	DNC-1, DNC-10, DNC-11, DNC-14		DNC-4, DNC-6, DNC-12, DNC-16, DNC-20, DNC-25, DNC-26
Drought	DNC-2	DNC-19	DNC-7, DNC-8, DNC-13, DNC-17	DNC-2	DNC-9, DNC-21, DNC-22, DNC-29	DNC-10		DNC-12, DNC-20, DNC-25
Sea level rise	DNC-23, DNC-24	DNC-19	DNC-7, DNC-8, DNC-13, DNC-17		DNC-9, DNC-21, DNC-22, DNC-29	DNC-10, DNC-11, DNC-14	DNC-5	DNC-12, DNC-16, DNC-20, DNC-25
Dam failure	DNC-2	DNC-19	DNC-7, DNC-8, DNC-13, DNC-17	DNC-2	DNC-9, DNC-21, DNC-22, DNC-29	DNC-10, DNC-11, DNC-14		DNC-6, DNC-12, DNC-16, DNC-20, DNC-25

a. See the introduction to this volume for explanation of mitigation types.

1.11 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

1.11.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Del Norte County Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Del Norte County Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Del Norte County General Plan**—The General Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Del Norte County Local Coastal Program (LCP)**—The LCP was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Technical Reports and Information—**The following **o**utside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

1.11.2 Staff and Local Stakeholder Involvement in Annex Development

This annex was developed over the course of several months with input from many county departments including the County Administrative Office, Office of Emergency Services, and Community Development Department. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. In addition, input received from the Del Norte County Local Hazard Mitigation Plan Steering Committee and the general public was considered in the identification of actions for implementation.

Crescent City UGA Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Hazardous Materials
- Medical & Health Services
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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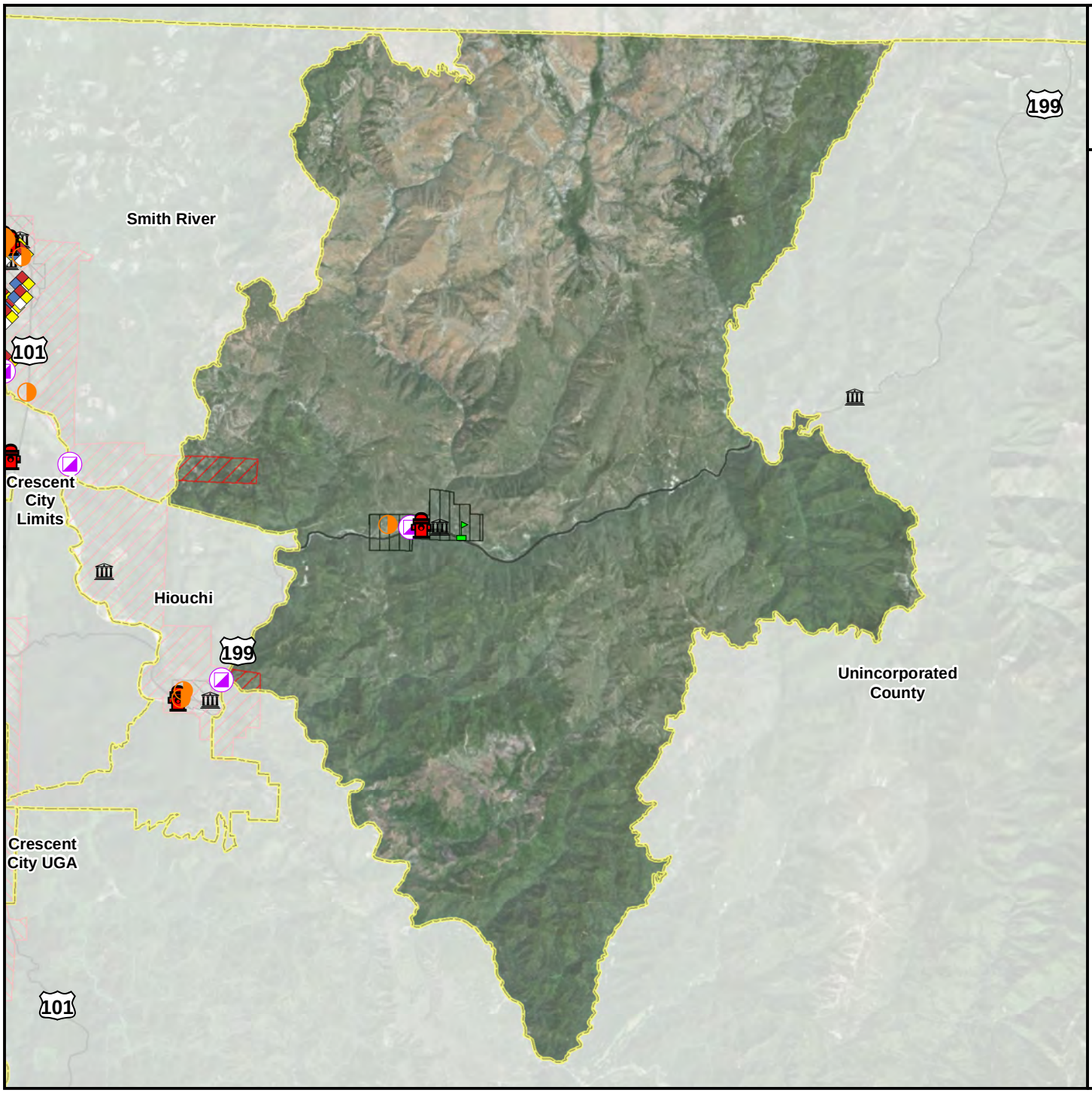
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Gasquet Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Hazardous Materials
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

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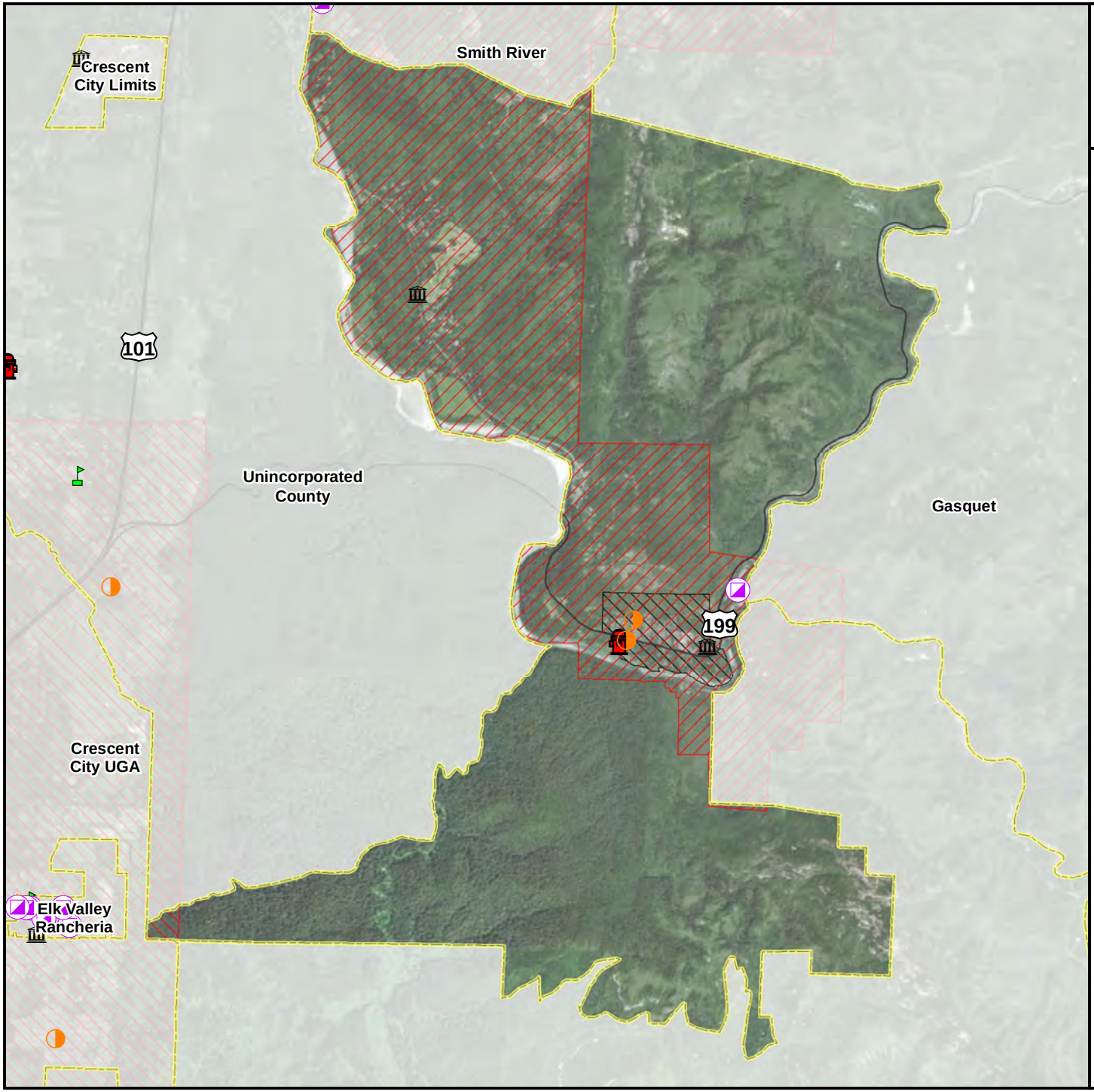
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Hiouchi Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Smith River Fire Protection District

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TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California

Klamath Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Klamath Community Services District

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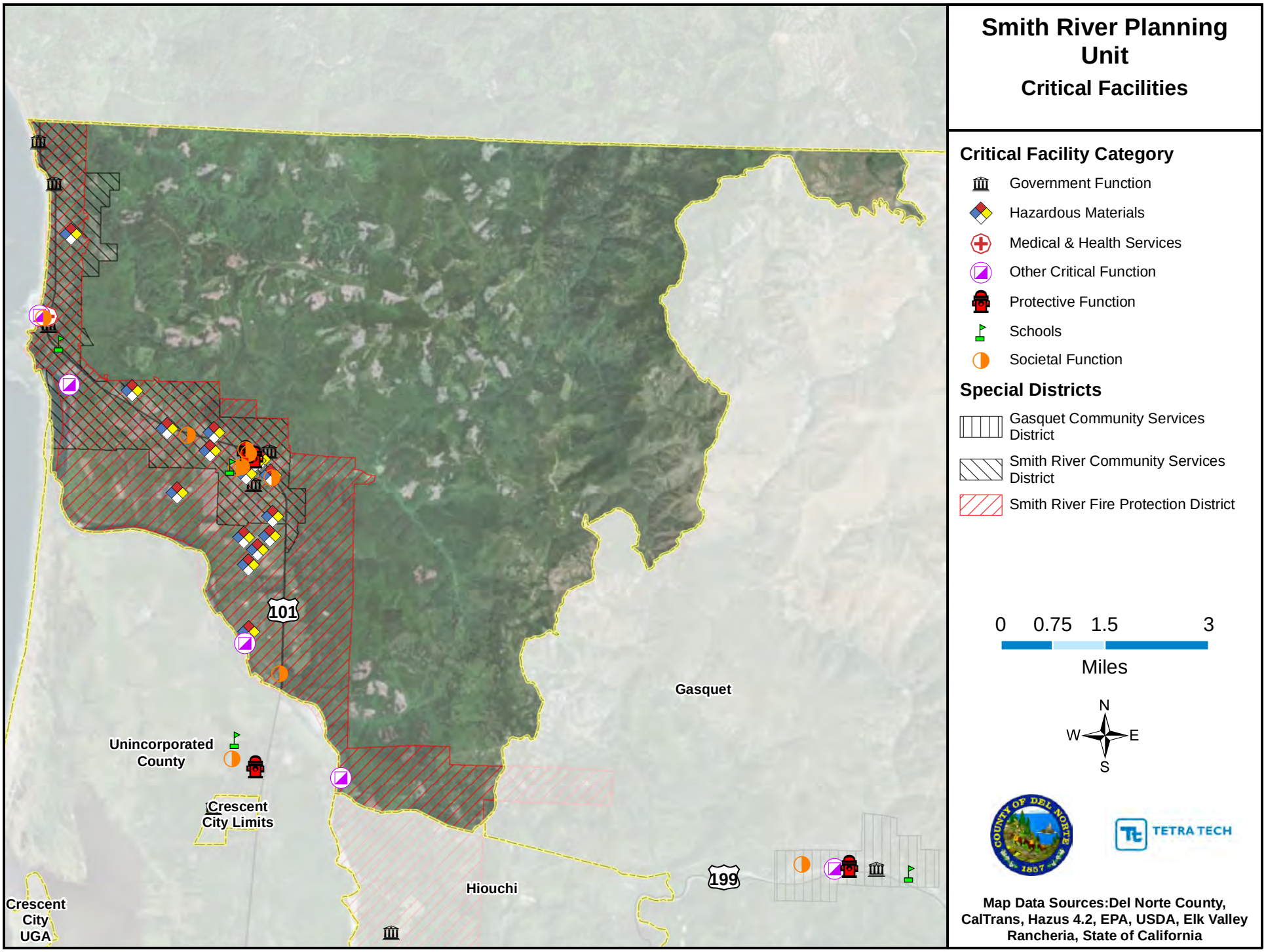
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Smith River Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Hazardous Materials
- Medical & Health Services
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

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Miles

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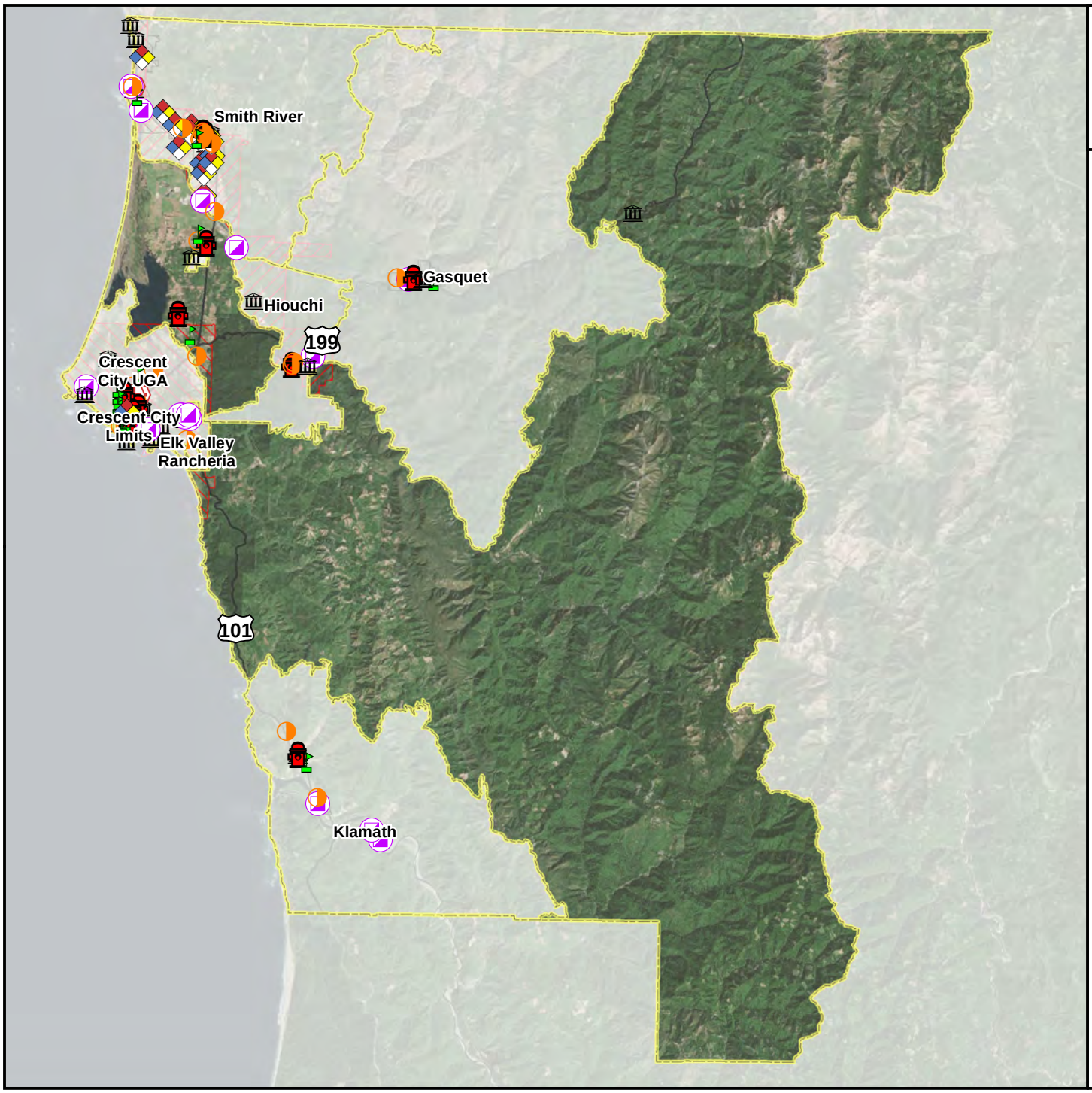
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Unincorporated County Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Hazardous Materials
- Medical & Health Services
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District

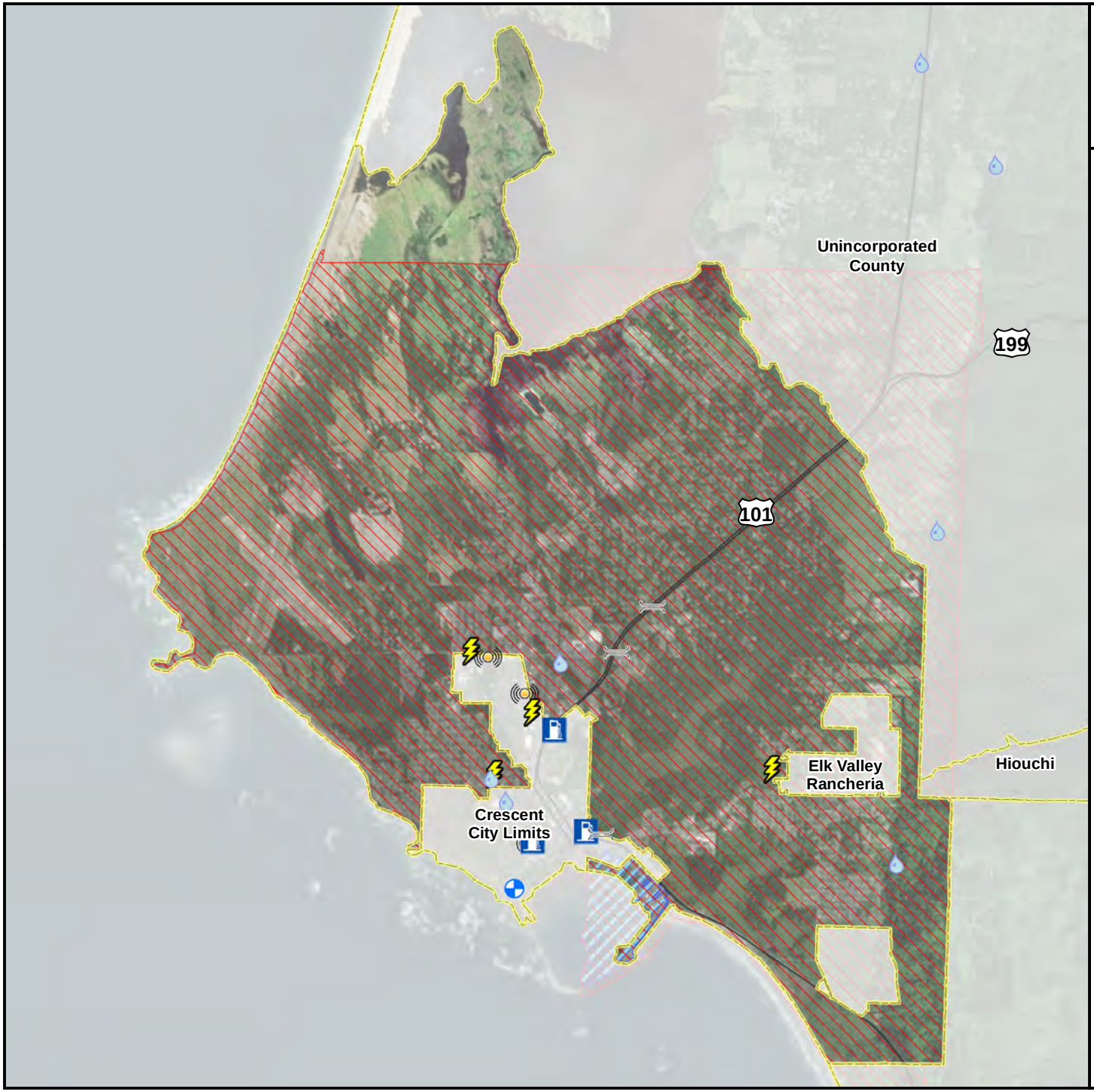
0 3 6 12

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Crescent City UGA Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Bridges
- Communication
- Fuel Storage
- Power
- Waste Water
- Water Supply

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

0 0.5 1 2

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California

Gasquet Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Bridges
- Communication
- Fuel Storage
- Power
- Waste Water
- Water Supply

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection

0 1.5 3 6

Miles

N
W E
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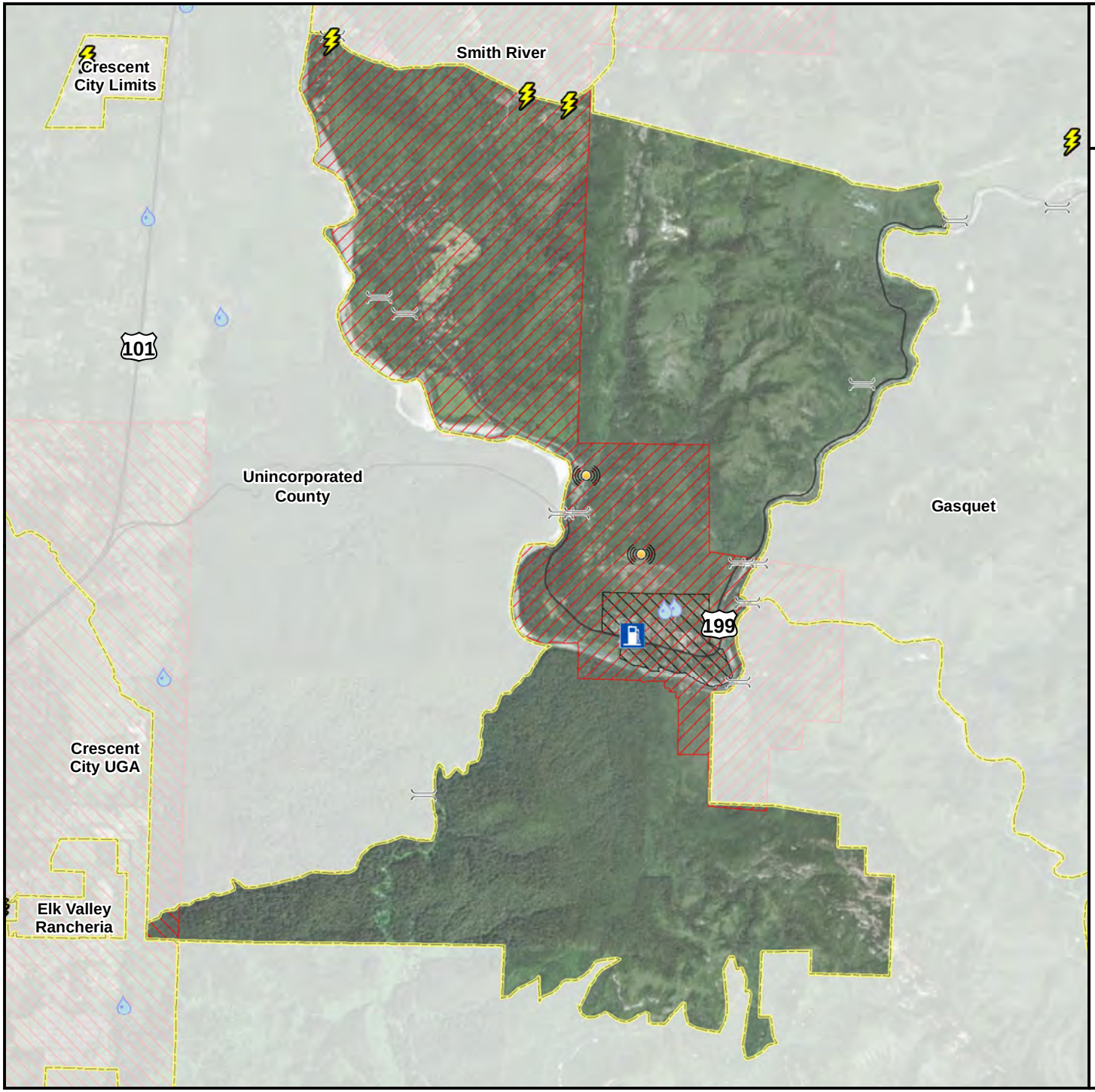
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Hiouchi Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Bridges
- Communication
- Fuel Storage
- Power
- Water Supply

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Smith River Fire Protection District

0 0.5 1 2

Miles

N
W E
S

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California

Klamath Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Bridges
- Communication
- Waste Water
- Water Supply

Special Districts

- Klamath Community Services District

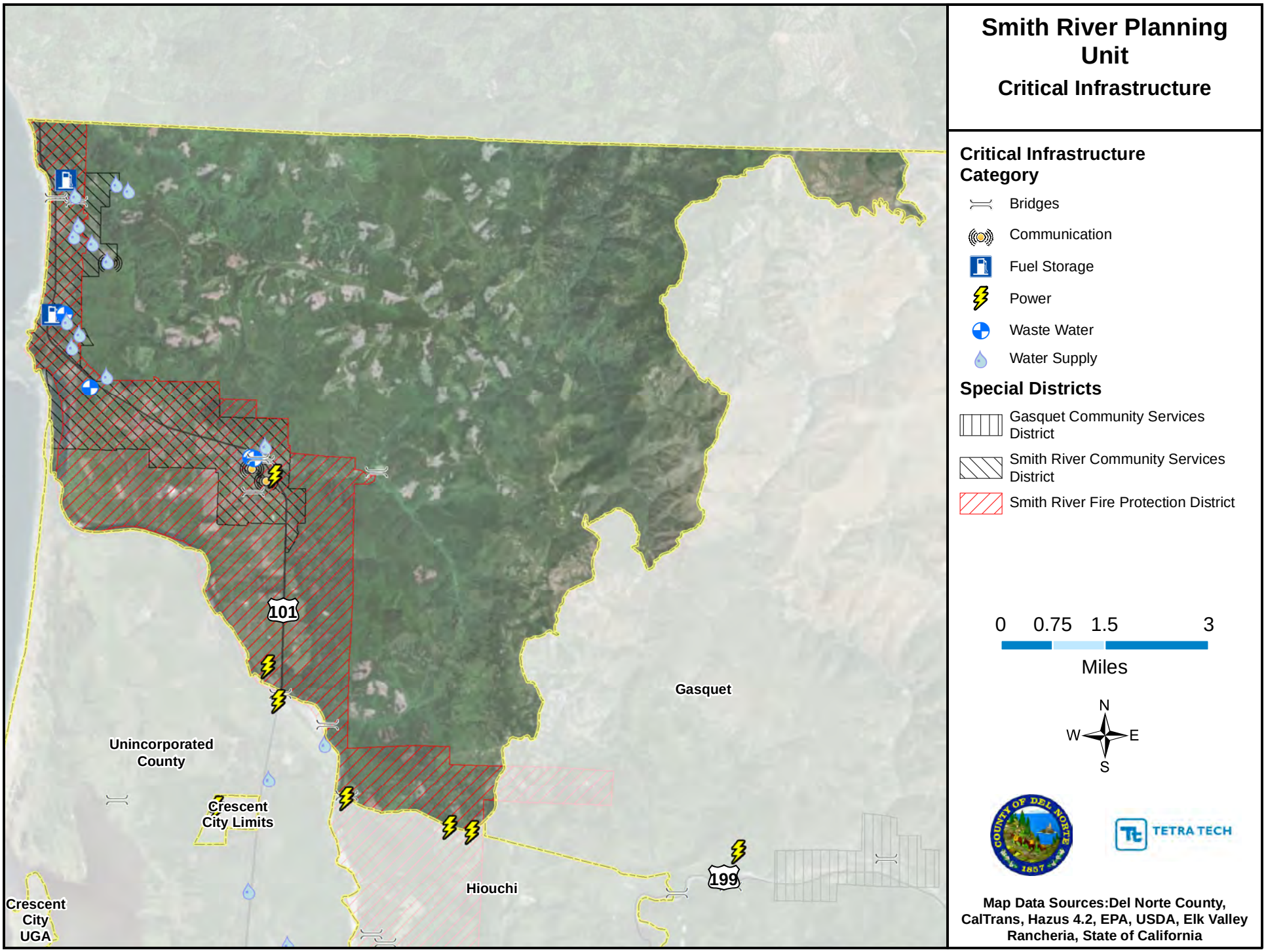
0 1 2 4

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California


Smith River Planning Unit
Critical Infrastructure
Critical Infrastructure Category
Bridges
Communication
Fuel Storage
Power
Waste Water
Water Supply
Special Districts
Gasquet Community Services District
Smith River Community Services District
Smith River Fire Protection District
0 0.75 1.5 3
Miles
N
W
E
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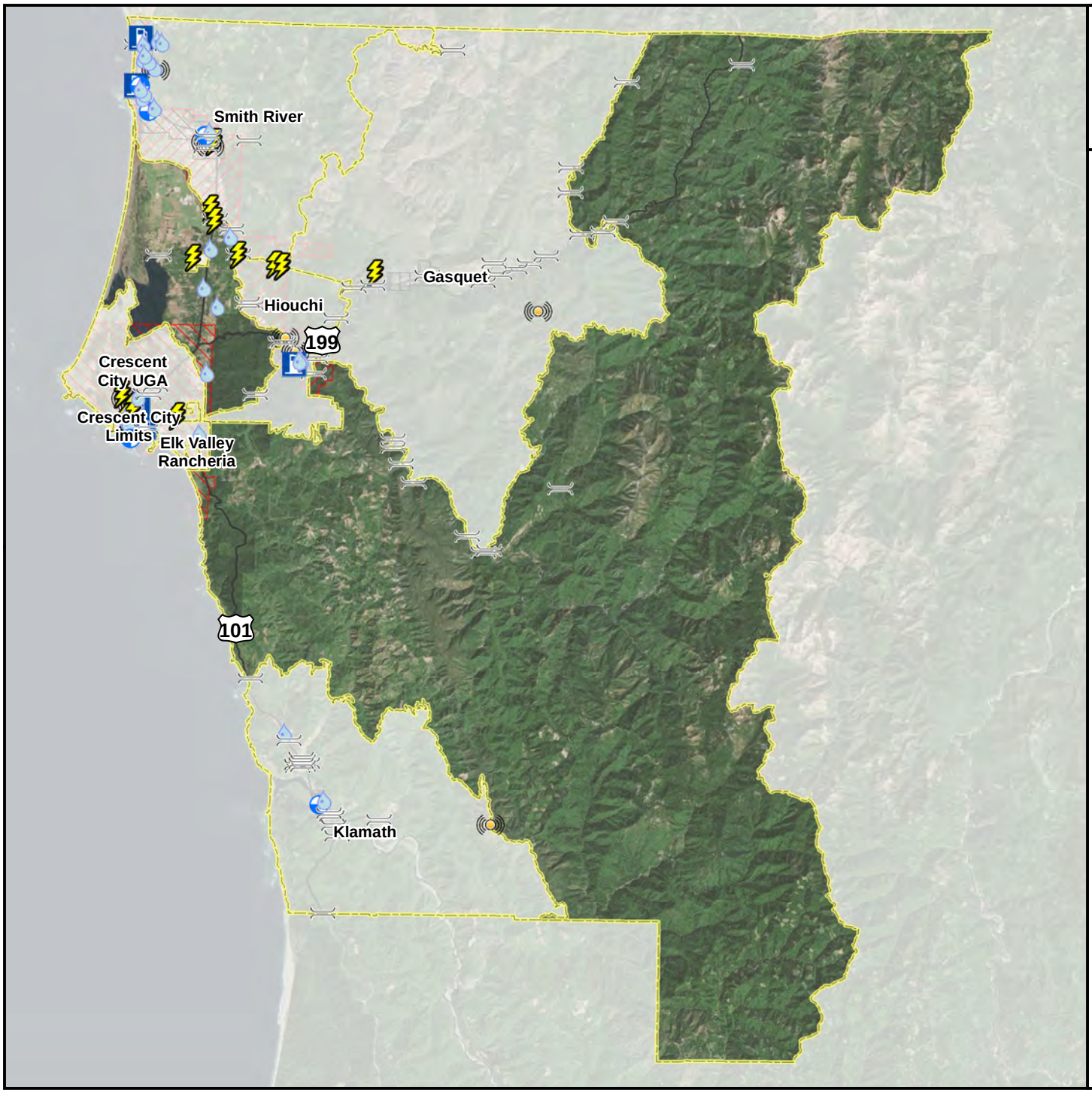
101
199
Gasquet
Unincorporated County
Crescent City Limits
Hiouchi
Crescent City UGA
TETRA TECH
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Unincorporated County Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Bridges
- Communication
- Fuel Storage
- Power
- Waste Water
- Water Supply

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District

0 3 6 12

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California

Crescent City UGA Planning Unit

Dam Inundation Areas

Dam Inundation Areas

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

0 0.5 1 2

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California

Gasquet Planning Unit

Dam Inundation Areas

Dam Inundation

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection

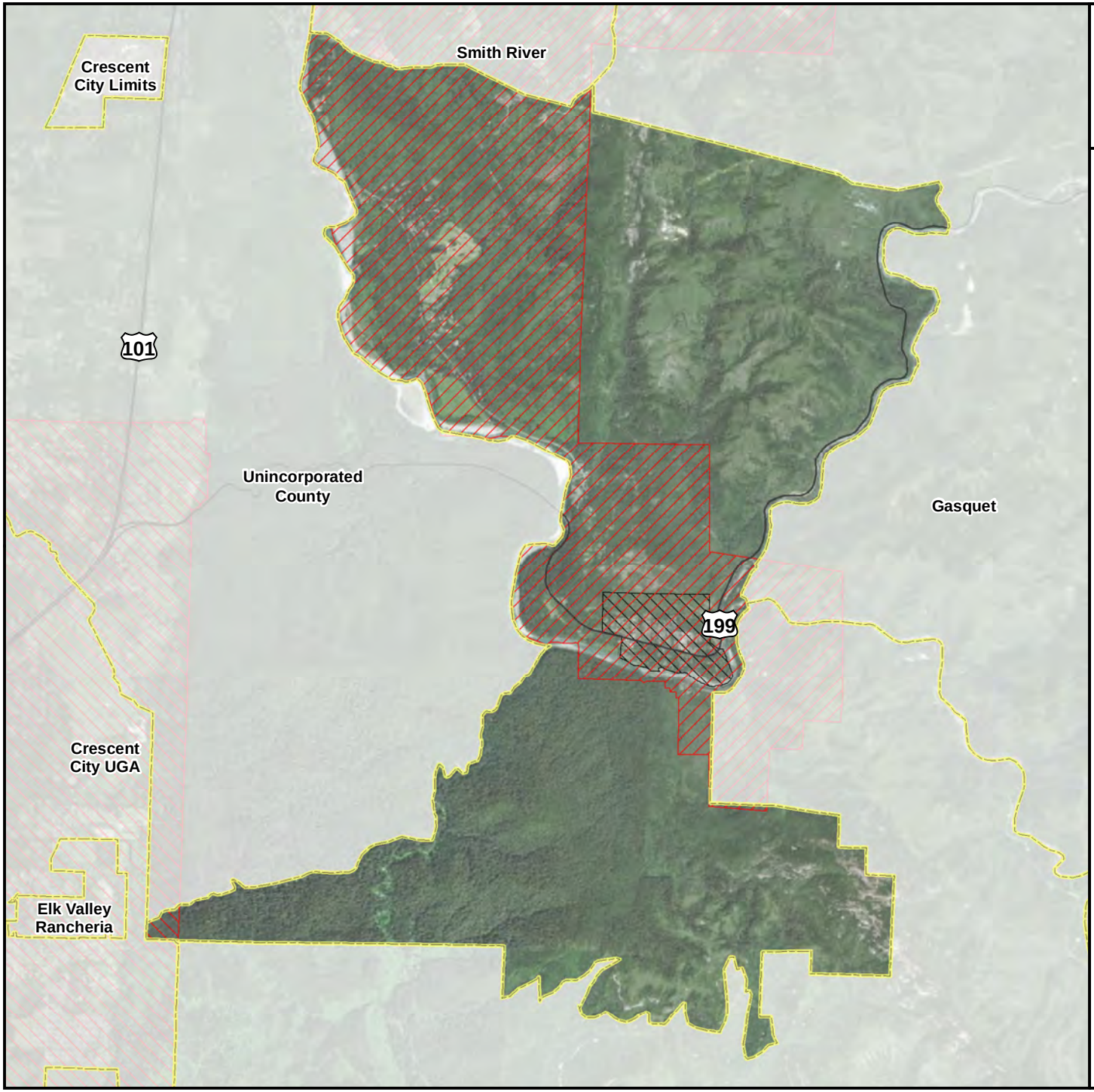
0 1.5 3 6

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Hiouchi Planning Unit

Dam Inundation Areas

Dam Inundation Areas

Special Districts

Big Rock Community Services District

Crescent Fire Protection District

Smith River Fire Protection District

0 0.5 1 2

Miles

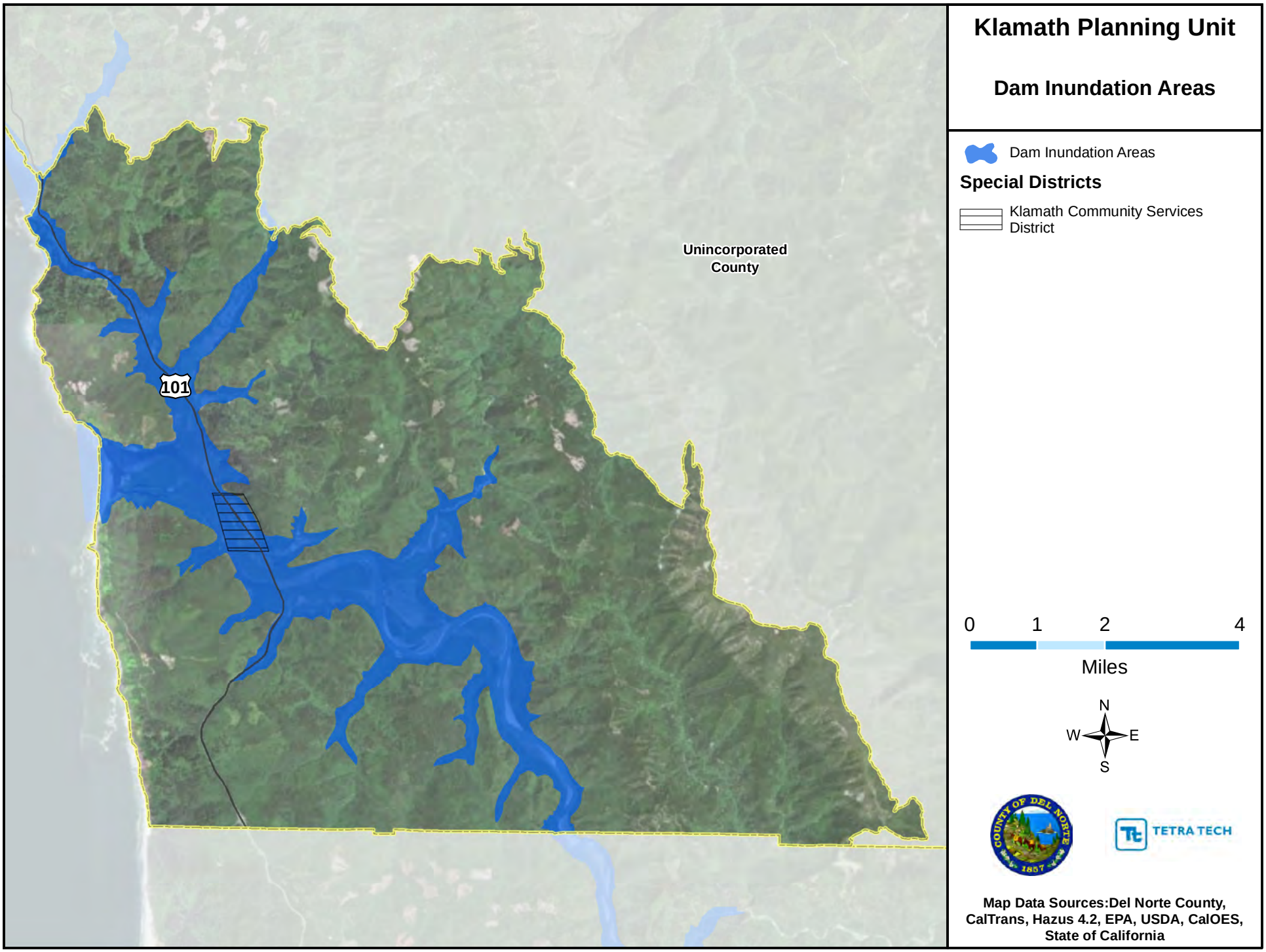
N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Klamath Planning Unit

Dam Inundation Areas

Dam Inundation Areas

Special Districts

Klamath Community Services District

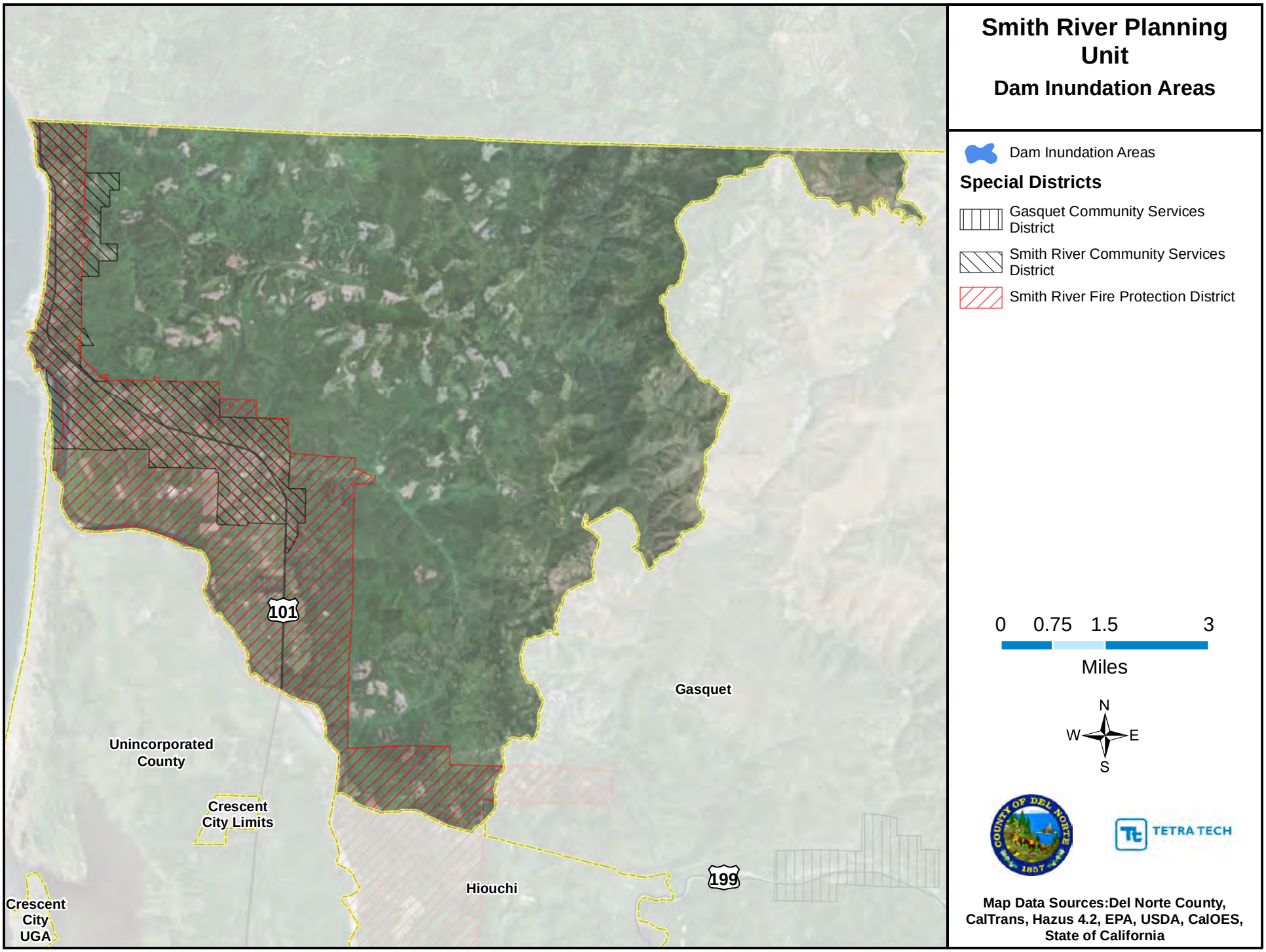
0 1 2 4

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California


Smith River Planning Unit
Dam Inundation Areas
Dam Inundation Areas
Special Districts
Gasquet Community Services District
Smith River Community Services District
Smith River Fire Protection District
0 0.75 1.5 3
Miles
N
W
E
S
TETRA TECH
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California
101
199
Gasquet
Unincorporated County
Crescent City Limits
Hiouchi
Crescent City UGA

Unincorporated County Planning Unit

Dam Inundation Areas

Dam Inundation Areas

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

0 3 6 12

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California

Crescent City UGA Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Crescent City Harbor District

Crescent Fire Protection District

Smith River Fire Protection District

0 0.5 1 2

Miles

N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California

Gasquet Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Big Rock Community Services District

Crescent Fire Protection District

Gasquet Community Services District

Smith River Community Services District

Smith River Fire Protection District

0 1.5 3 6

Miles

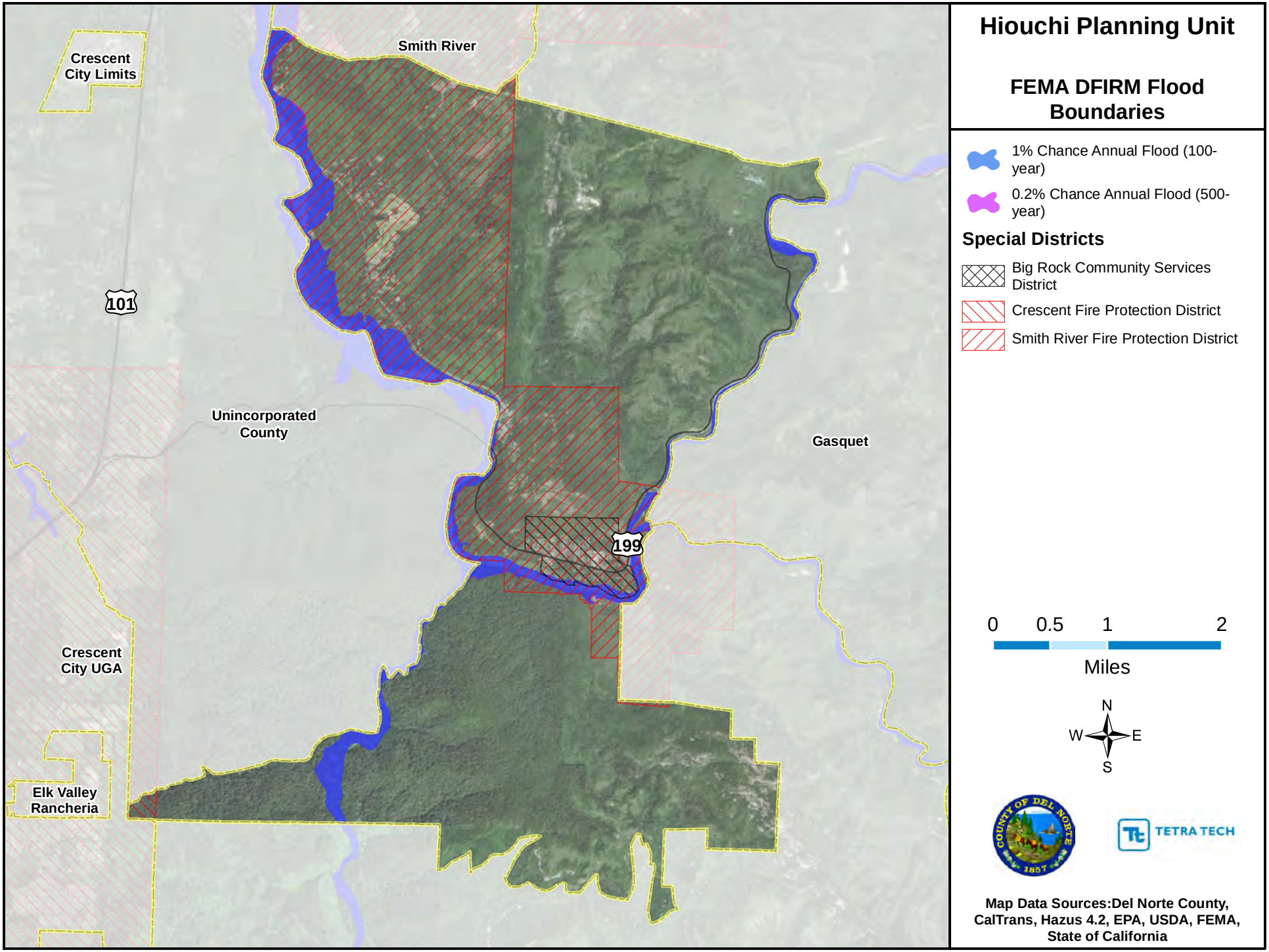
N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California



Hiouchi Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Big Rock Community Services District

Crescent Fire Protection District

Smith River Fire Protection District

0 0.5 1 2

Miles

N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California

Klamath Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

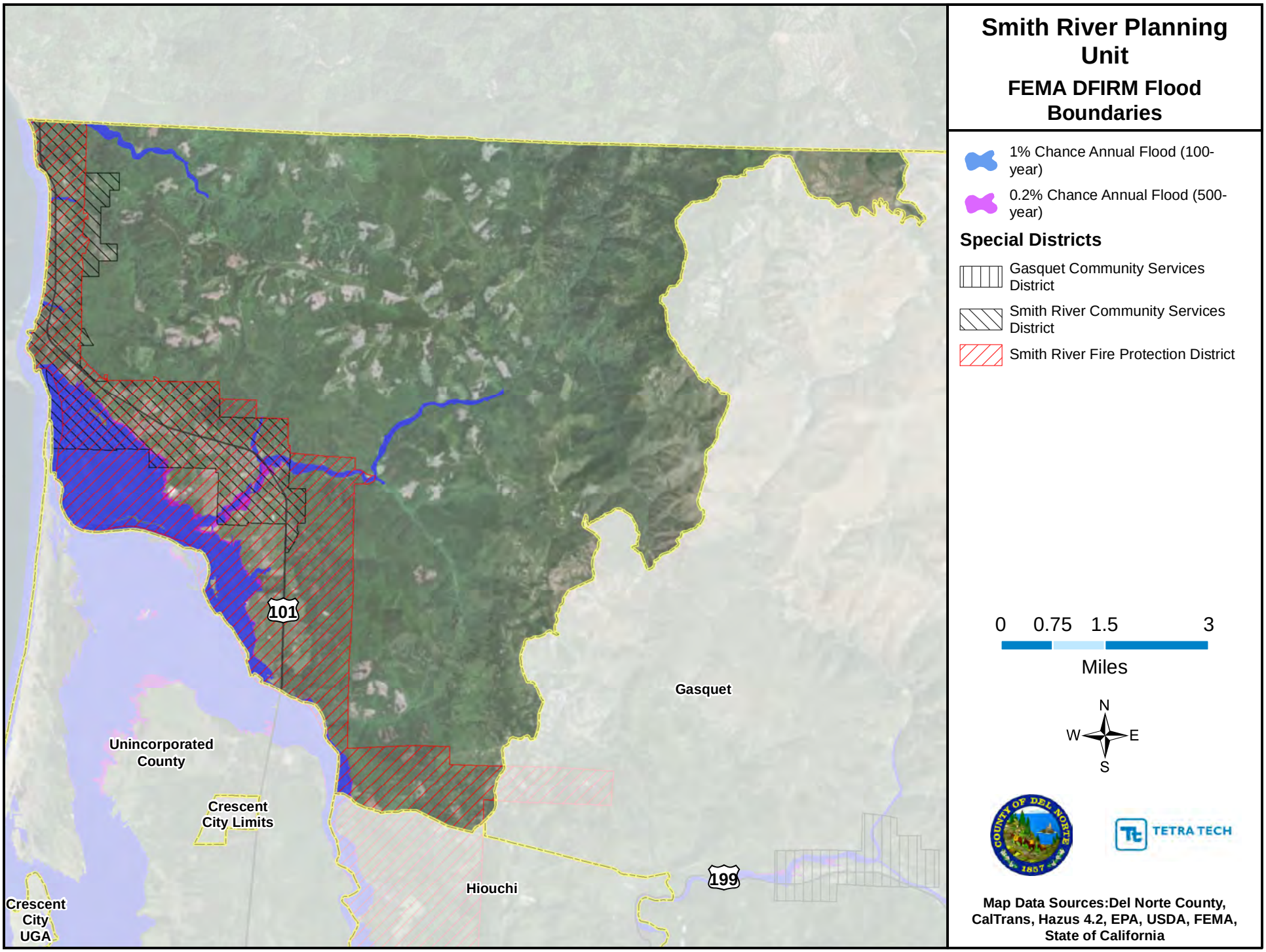
Klamath Community Services District

0 1 2 4

Miles

N
W E
S

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California



Smith River Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Gasquet Community Services District

Smith River Community Services District

Smith River Fire Protection District

0 0.75 1.5 3

Miles

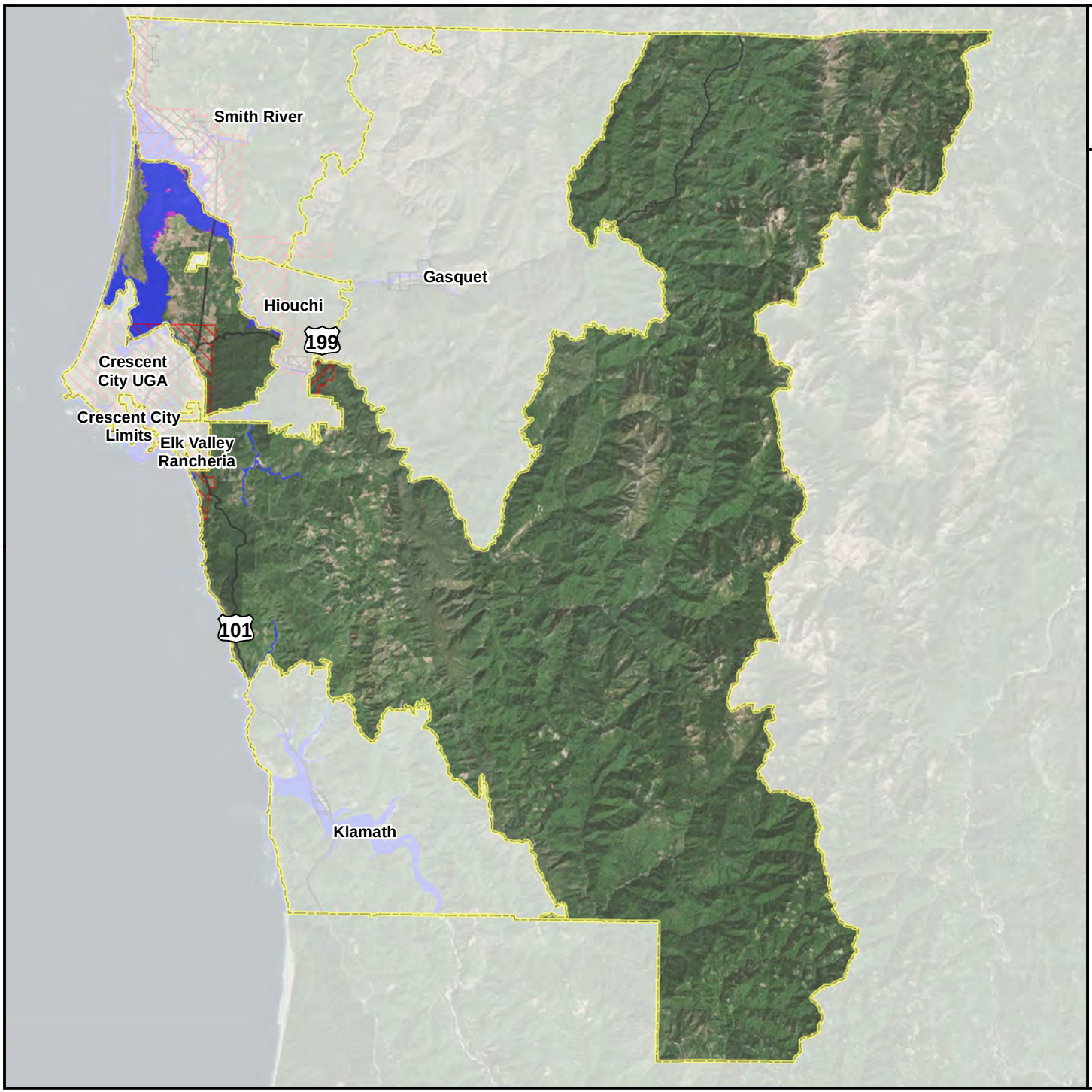
N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California



Unincorporated County Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Big Rock Community Services District

Crescent City Harbor District

Crescent Fire Protection District

Gasquet Community Services District

Klamath Community Services District

Smith River Community Services District

Smith River Fire Protection District

0 3 6 12

Miles

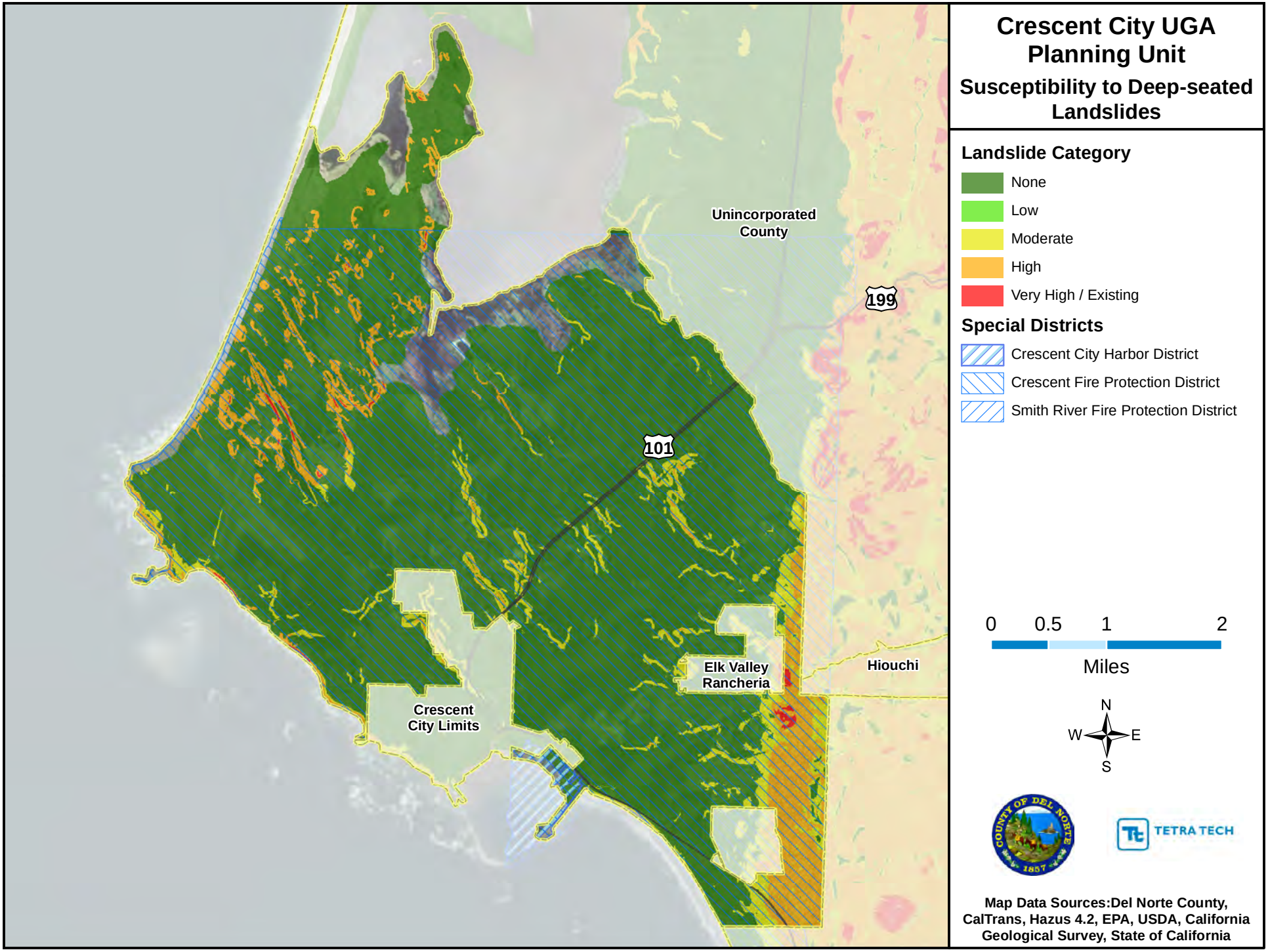
N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California



Crescent City UGA Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

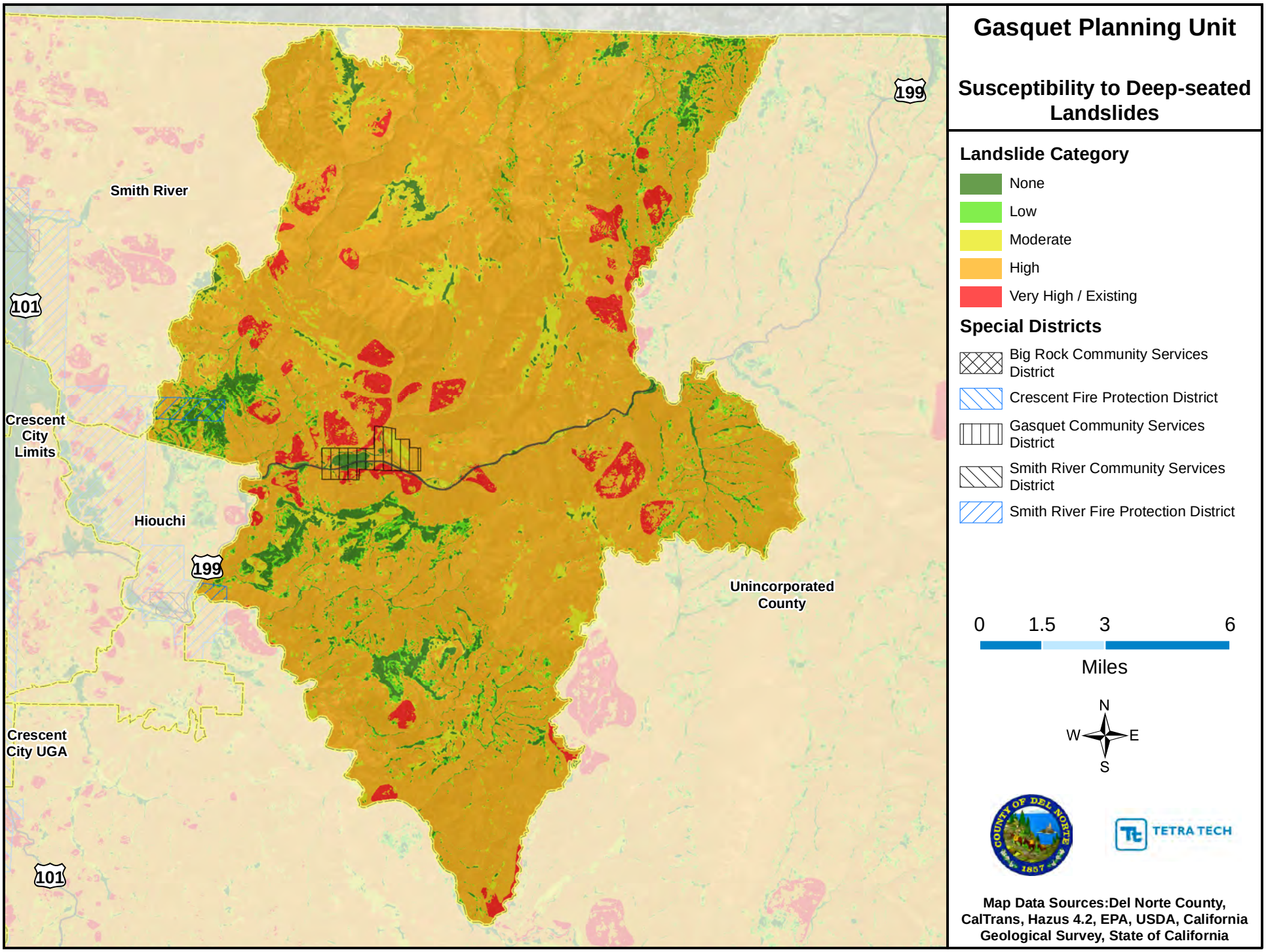
0 0.5 1 2

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Gasquet Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

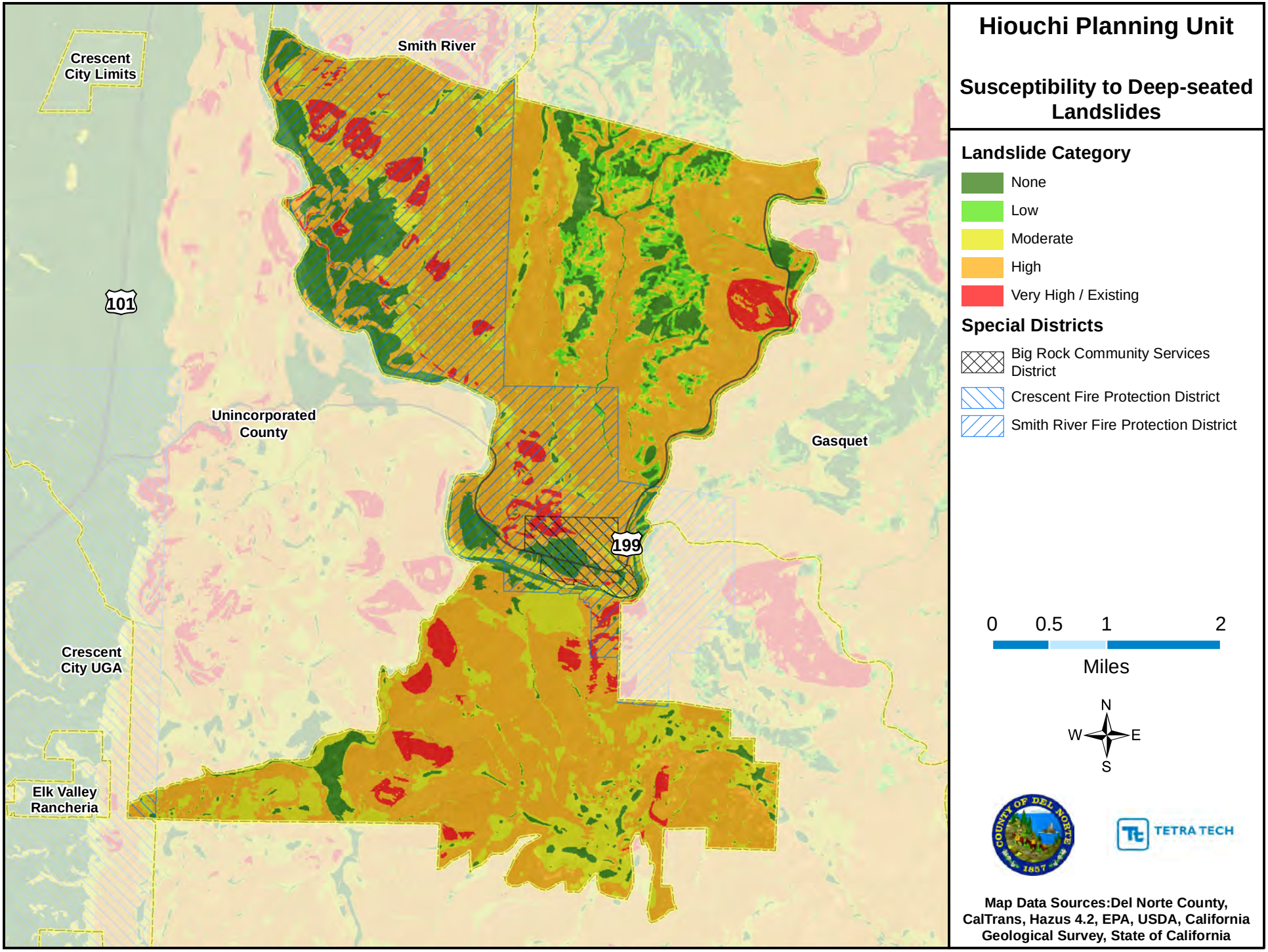
0 1.5 3 6

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Hiouchi Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Smith River Fire Protection District

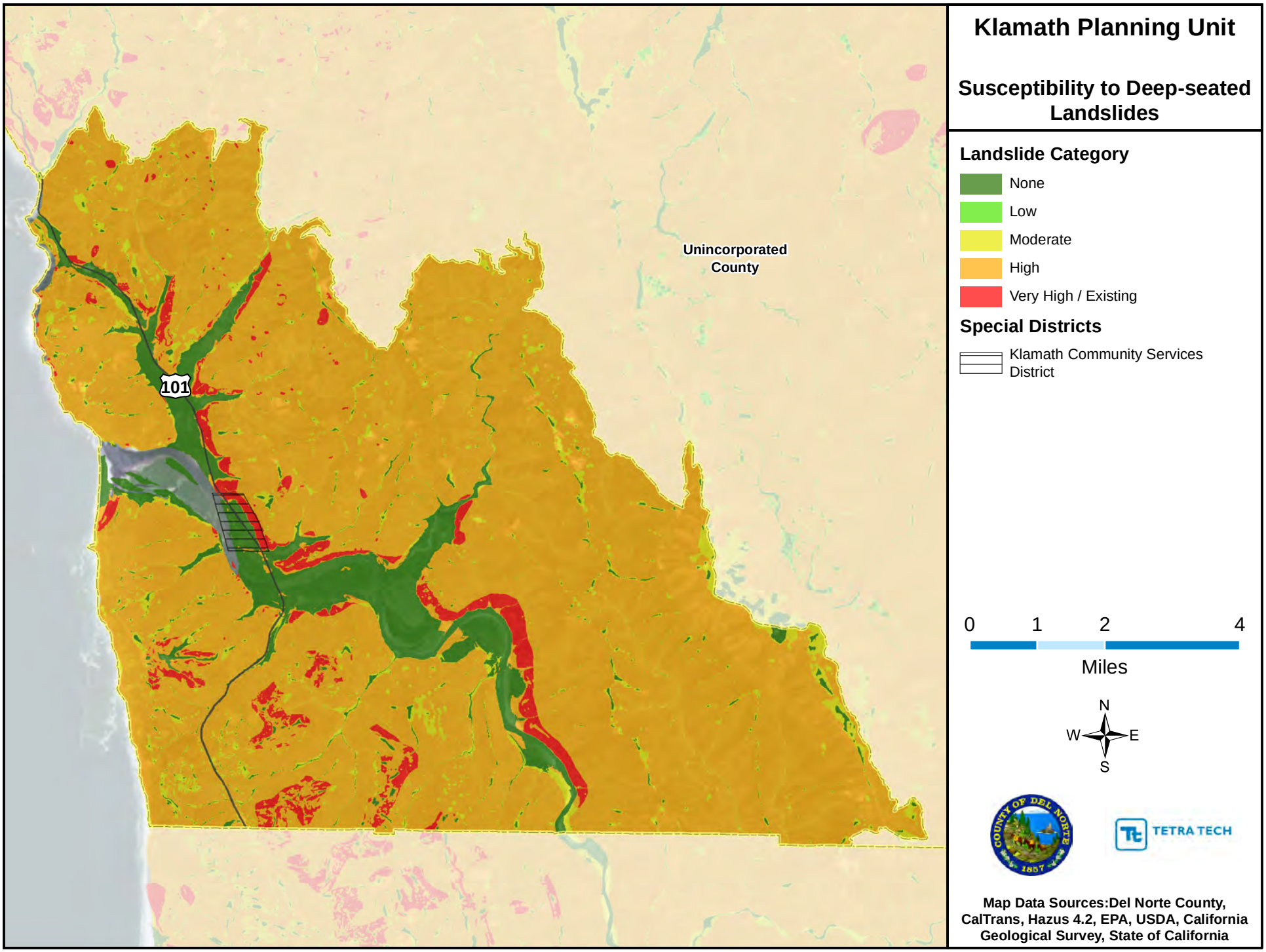
0 0.5 1 2

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Klamath Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Klamath Community Services District

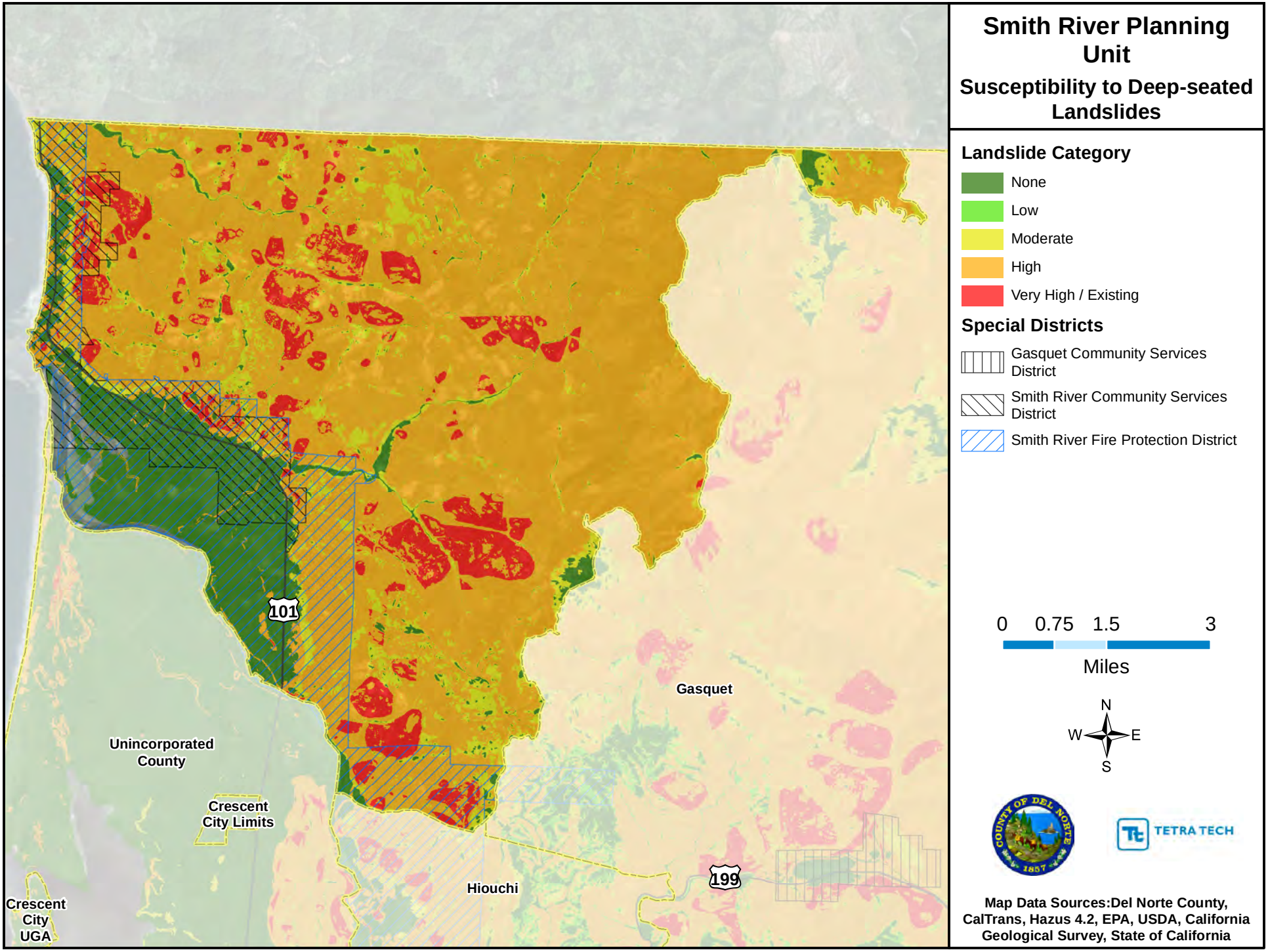
0 1 2 4

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Smith River Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

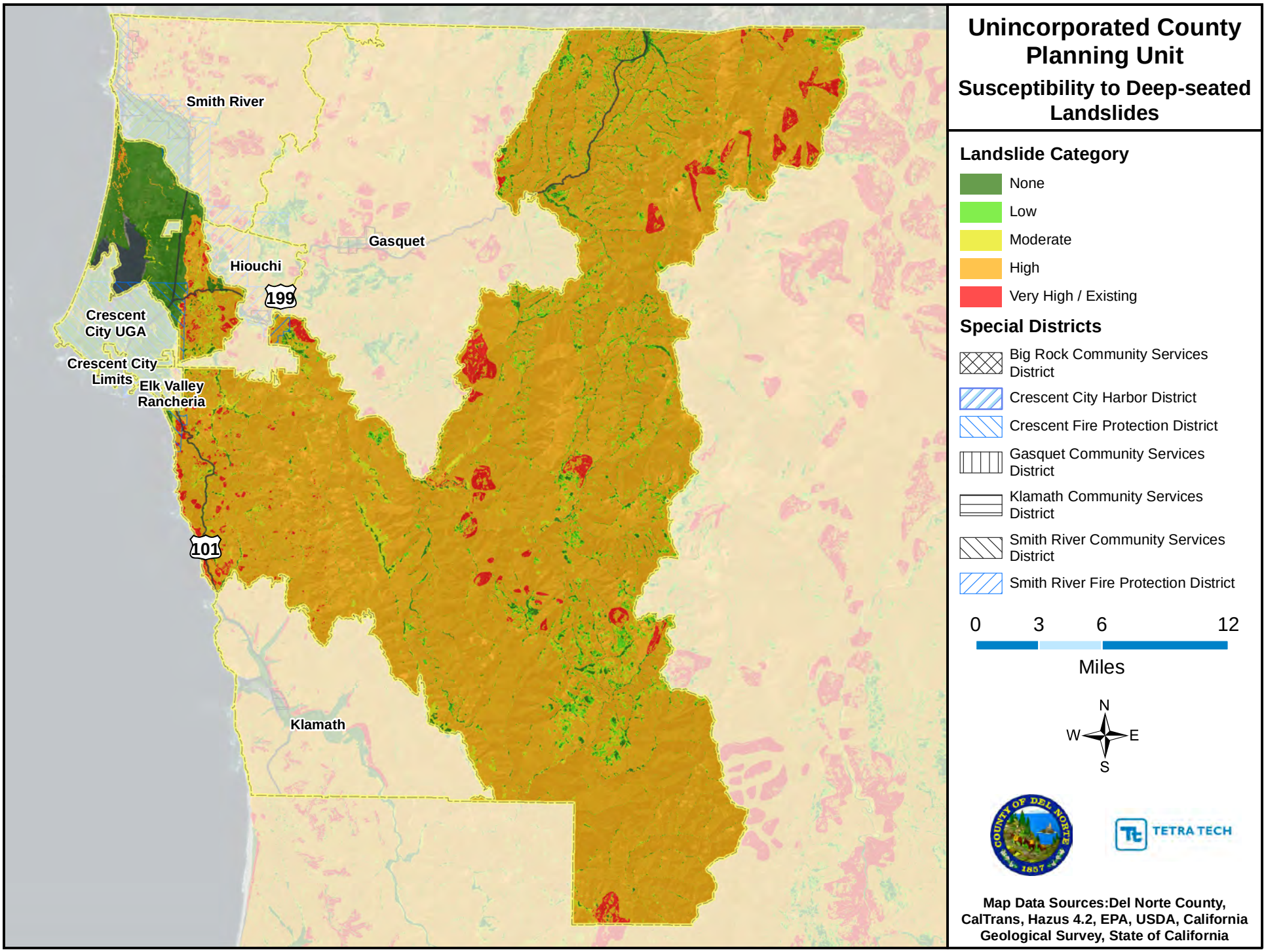
0 0.75 1.5 3

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Unincorporated County Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

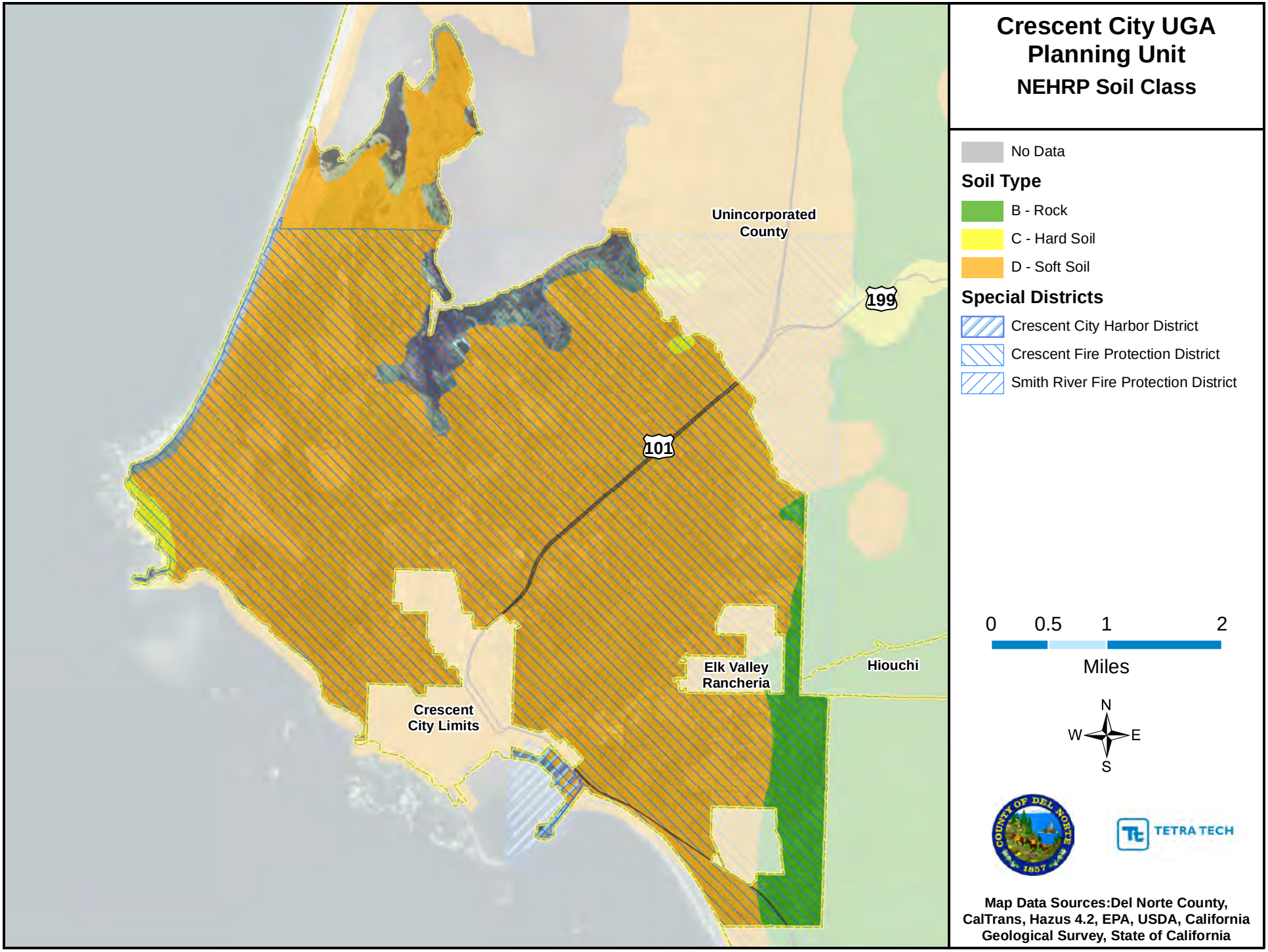
0 3 6 12

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Crescent City UGA Planning Unit

NEHRP Soil Class

No Data

Soil Type

- B - Rock
- C - Hard Soil
- D - Soft Soil

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

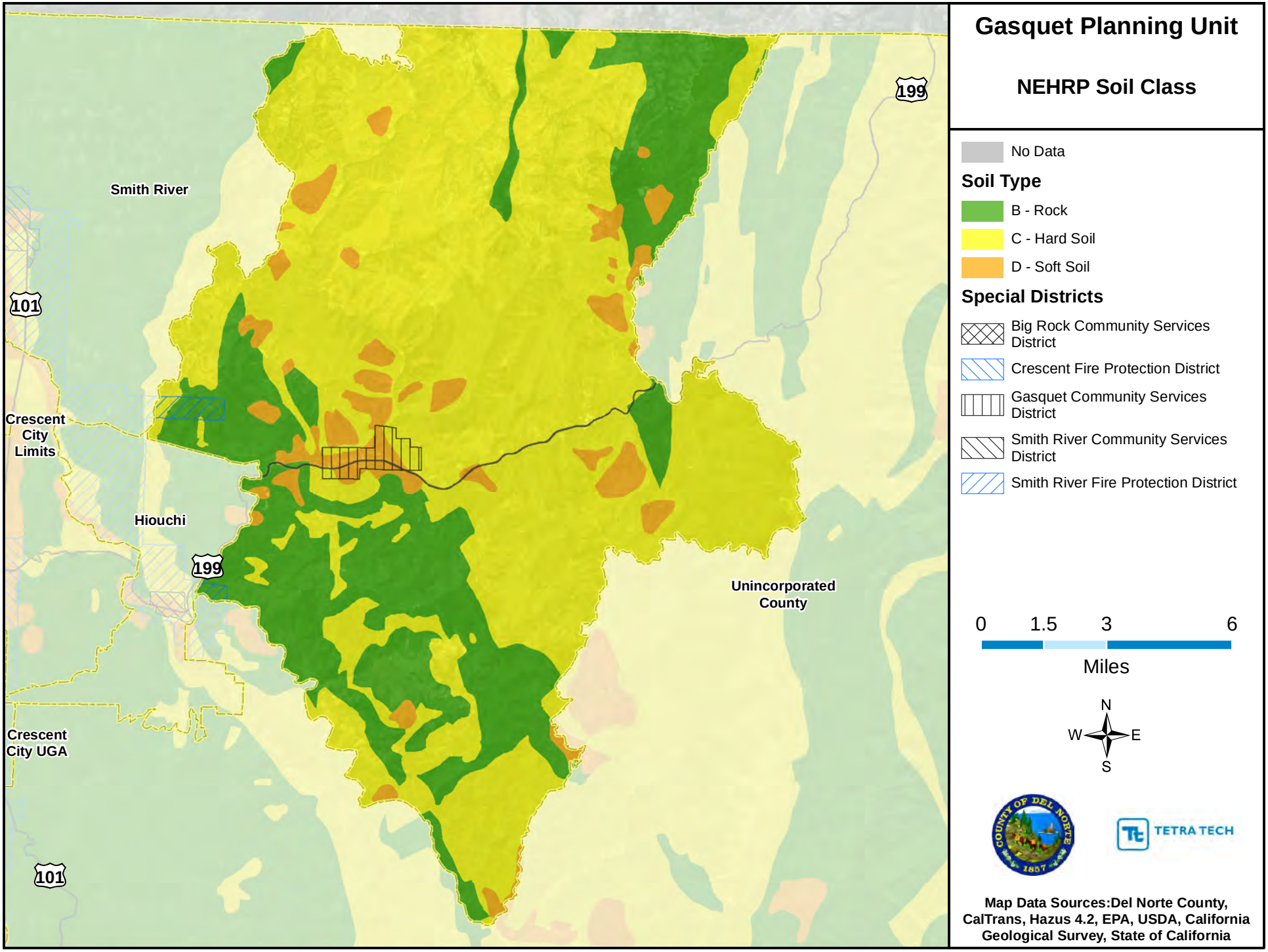
0 0.5 1 2

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Gasquet Planning Unit

NEHRP Soil Class

No Data

Soil Type

- B - Rock
- C - Hard Soil
- D - Soft Soil

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

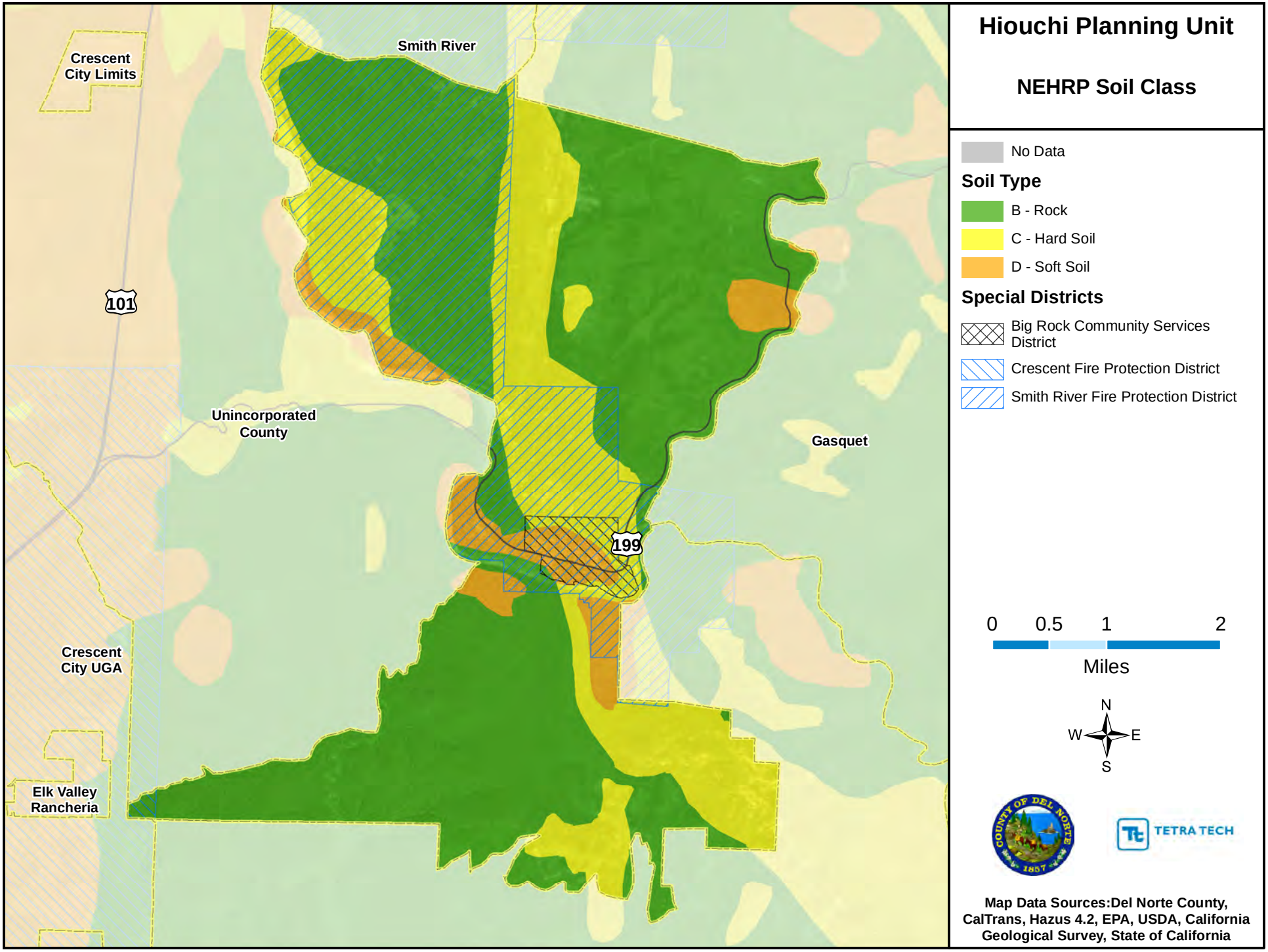
0 1.5 3 6

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Hiouchi Planning Unit

NEHRP Soil Class

No Data

Soil Type

- B - Rock
- C - Hard Soil
- D - Soft Soil

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Smith River Fire Protection District

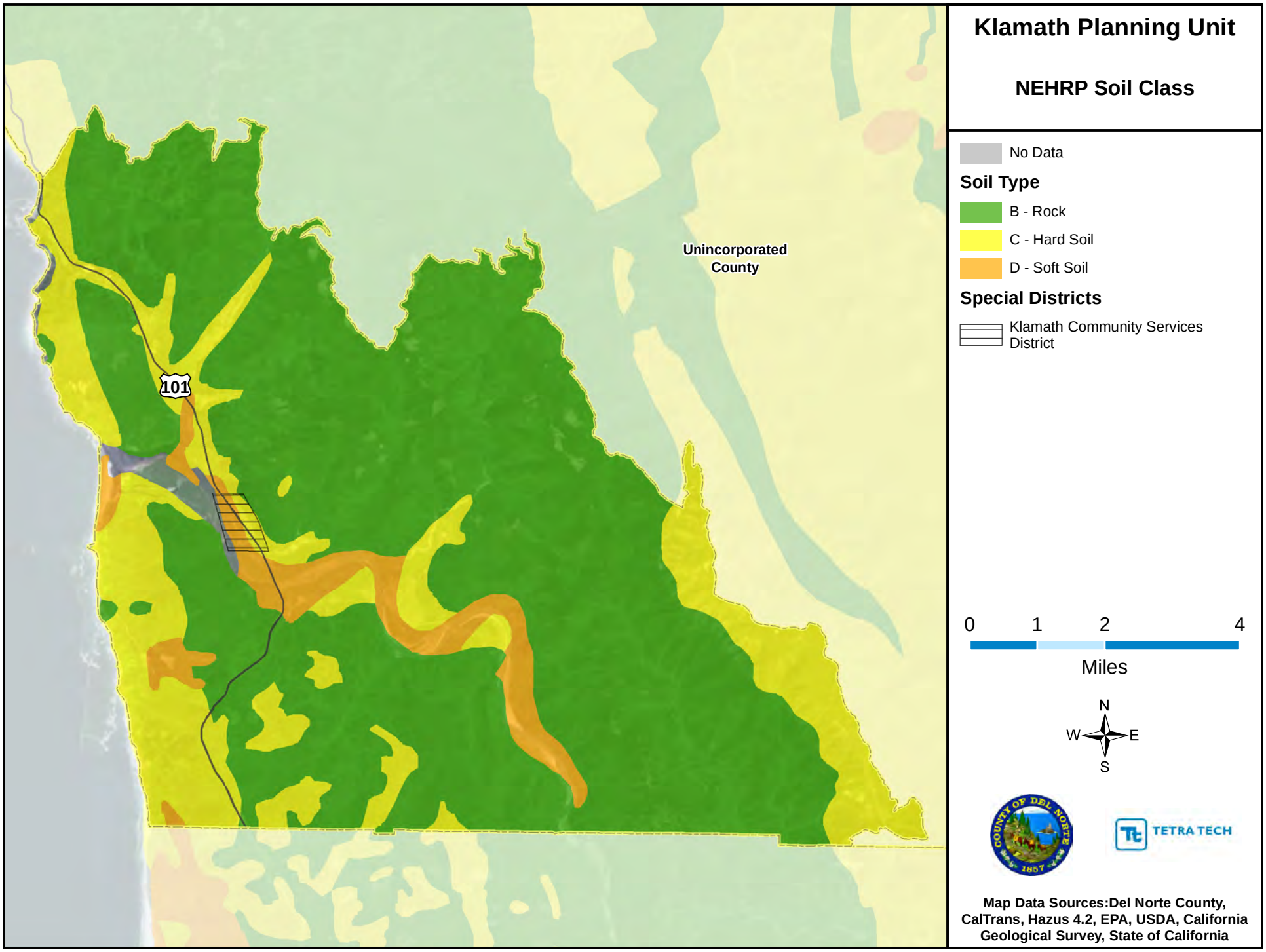
0 0.5 1 2

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Klamath Planning Unit

NEHRP Soil Class

No Data

Soil Type

B - Rock

C - Hard Soil

D - Soft Soil

Special Districts

Klamath Community Services District

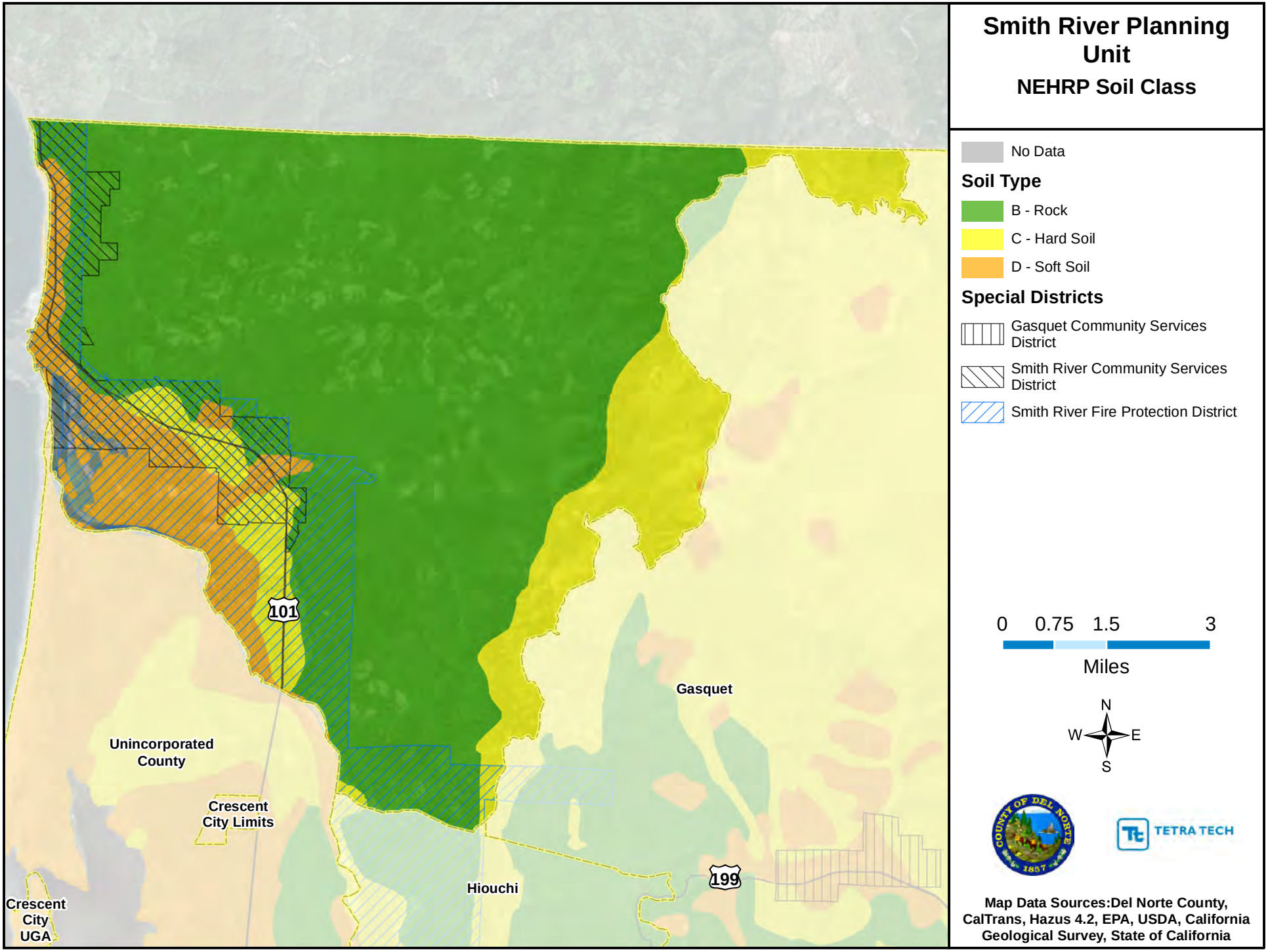
0 1 2 4

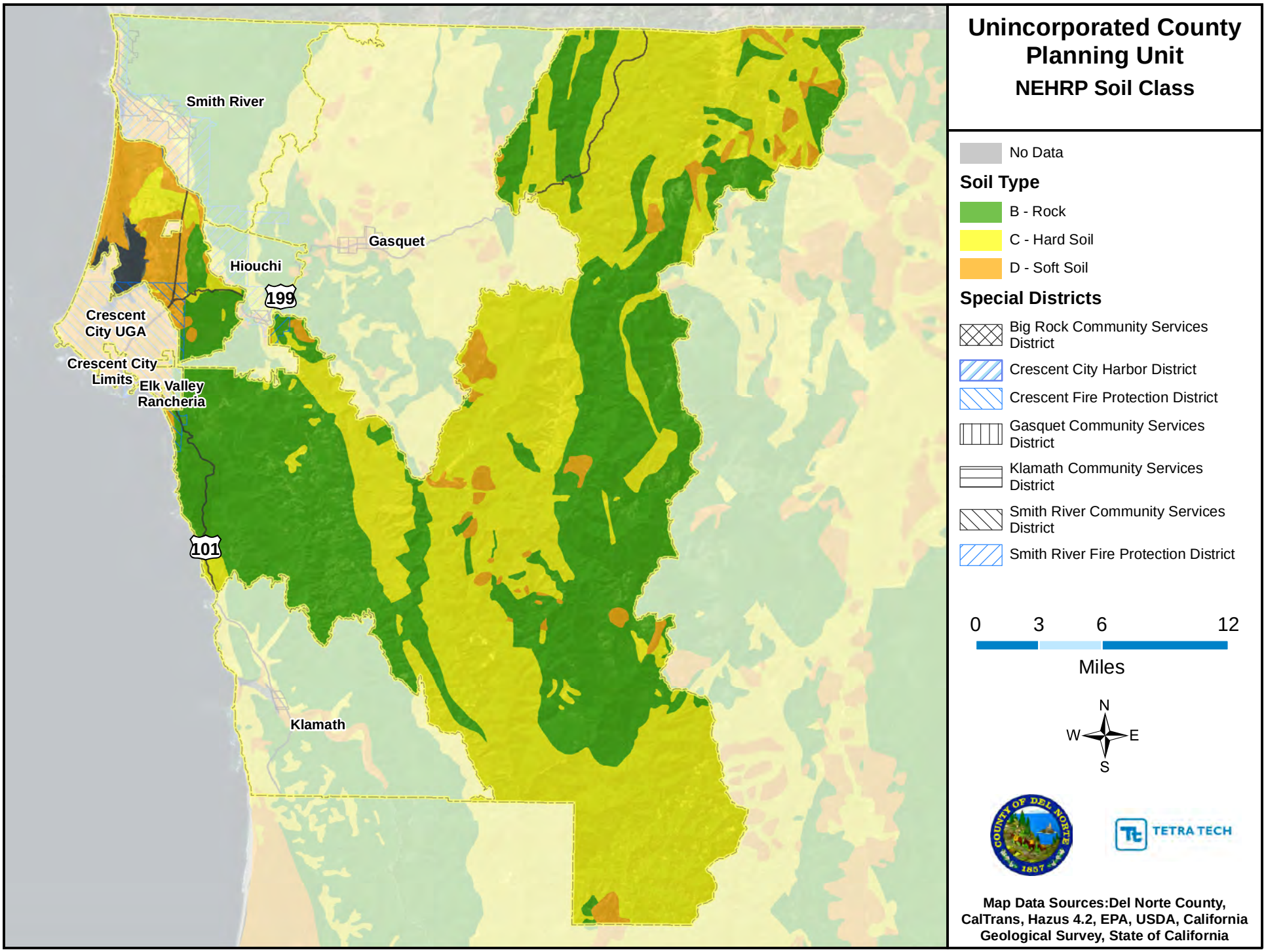
Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California


Smith River Planning Unit
NEHRP Soil Class
No Data
Soil Type
B - Rock
C - Hard Soil
D - Soft Soil
Special Districts
Gasquet Community Services District
Smith River Community Services District
Smith River Fire Protection District
0 0.75 1.5 3
Miles
N
W
E
S
TETRA TECH
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California
101
199
Gasquet
Unincorporated County
Crescent City Limits
Hiouchi
Crescent City UGA



Unincorporated County Planning Unit

NEHRP Soil Class

No Data

Soil Type

- B - Rock
- C - Hard Soil
- D - Soft Soil

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

0 3 6 12

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California

Crescent City UGA Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Crescent City Harbor District

Crescent Fire Protection District

Smith River Fire Protection District

0 0.5 1 2

Miles

N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California

Gasquet Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Big Rock Community Services District

Crescent Fire Protection

Gasquet Community Services District

Smith River Community Services District

Smith River Fire Protection

0 1.5 3 6

Miles

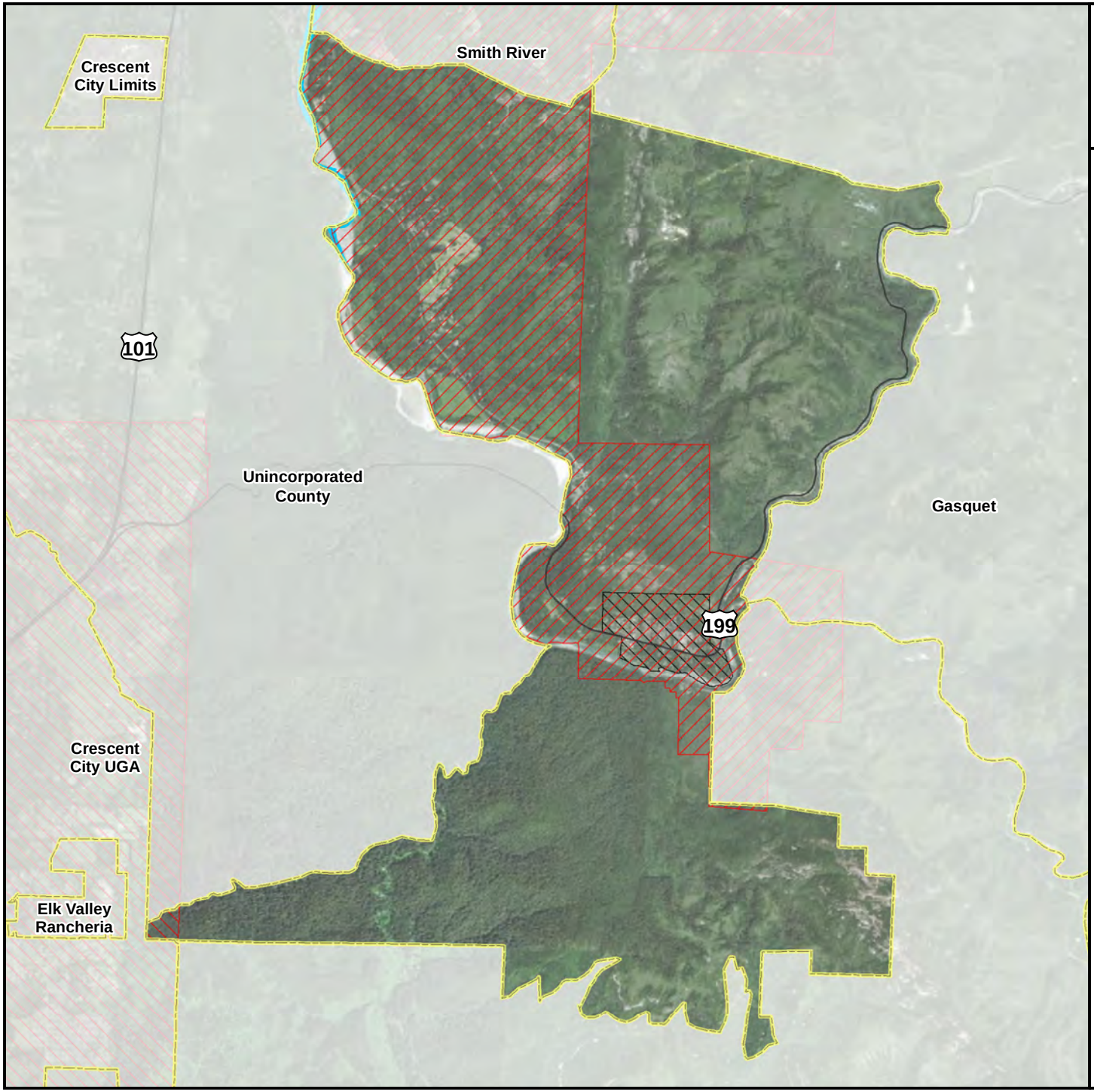
N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California



Hiouchi Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Big Rock Community Services District

Crescent Fire Protection District

Smith River Fire Protection District

0 0.5 1 2

Miles

N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California

Klamath Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Klamath Community Services District

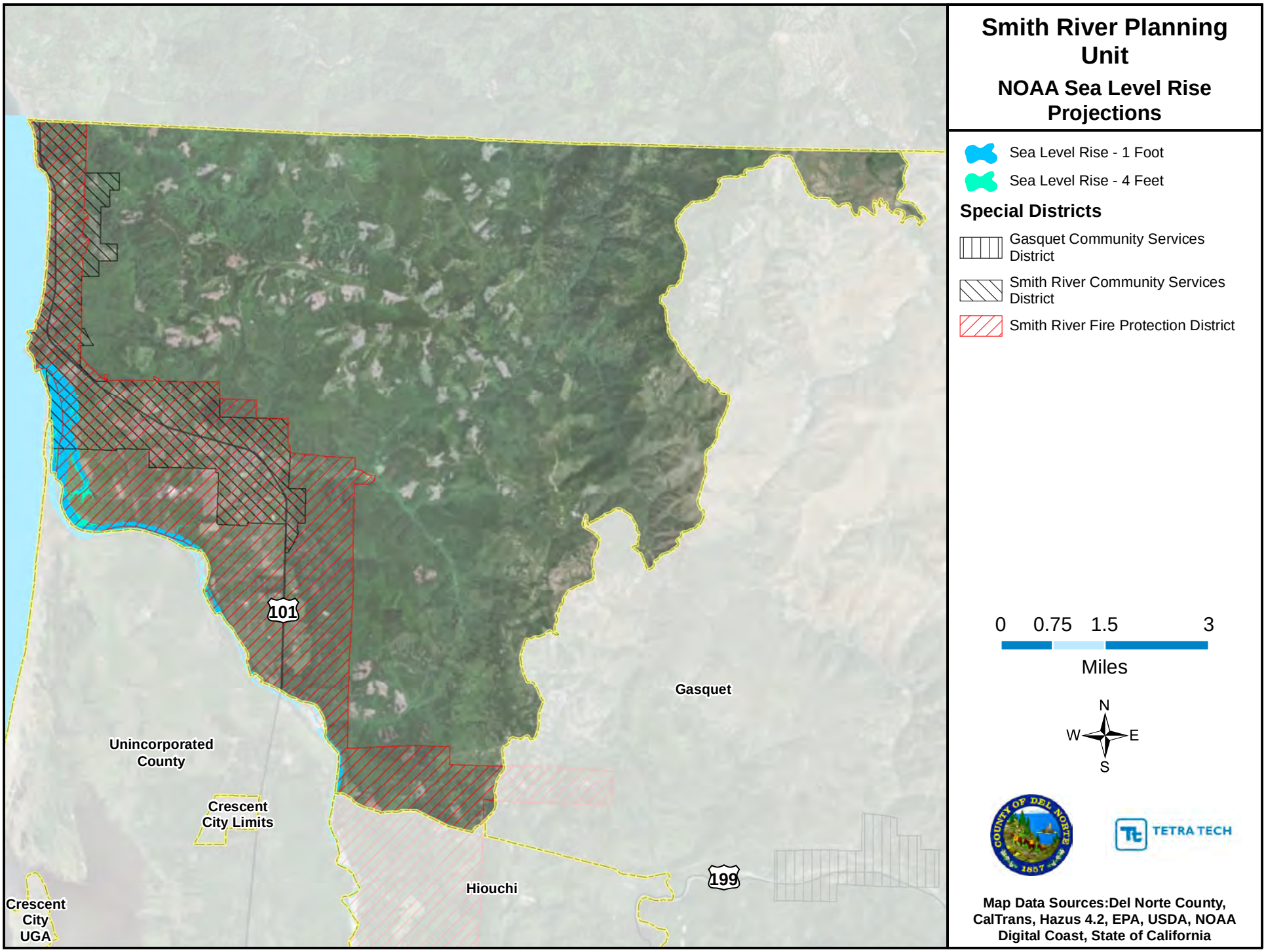
0 1 2 4

Miles

N
W E
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California



Smith River Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Gasquet Community Services District

Smith River Community Services District

Smith River Fire Protection District

0 0.75 1.5 3

Miles

N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California

Unincorporated County Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

0 3 6 12

Miles

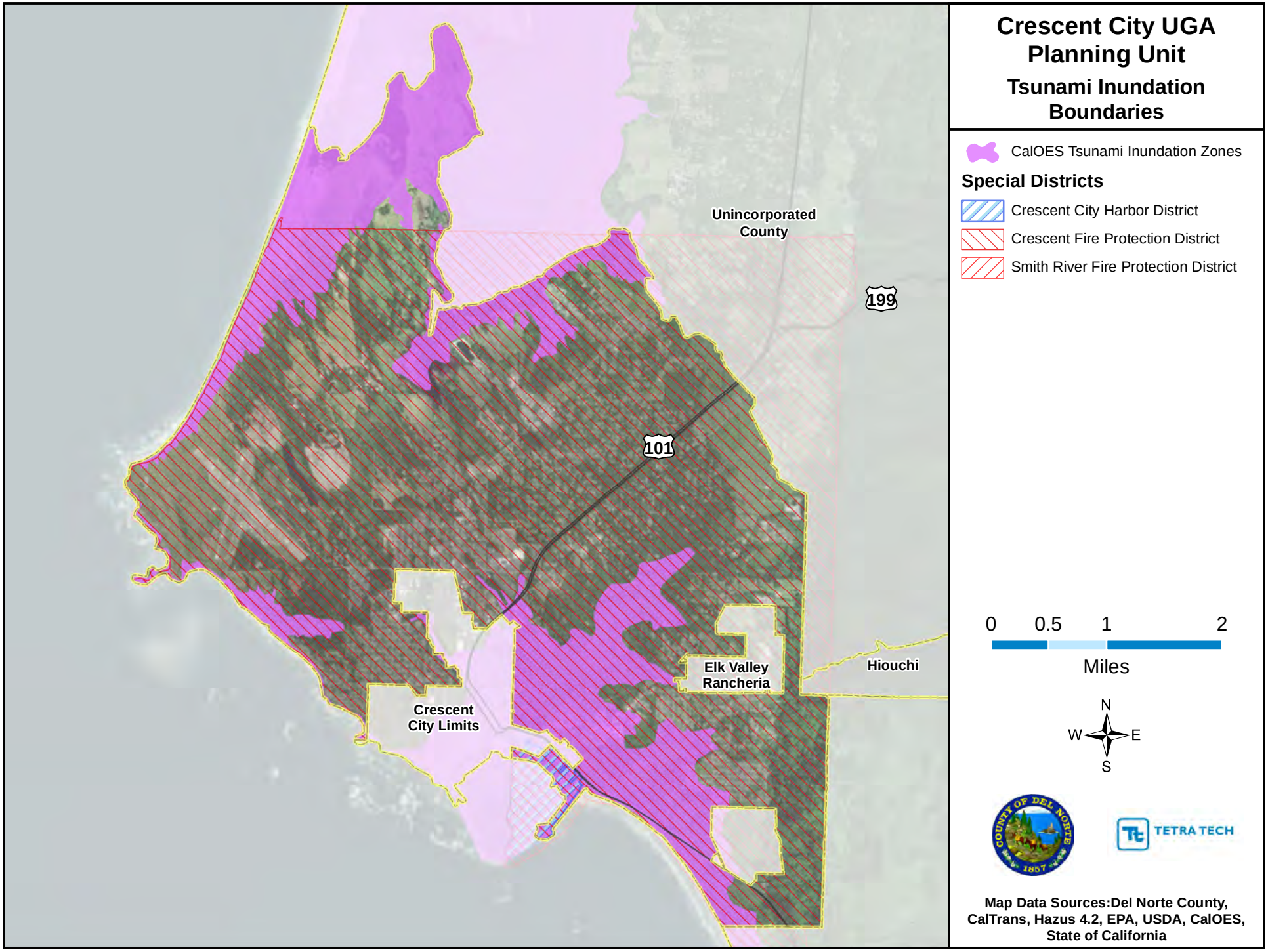
N

W E

S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California



Crescent City UGA Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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Miles

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TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California

Gasquet Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

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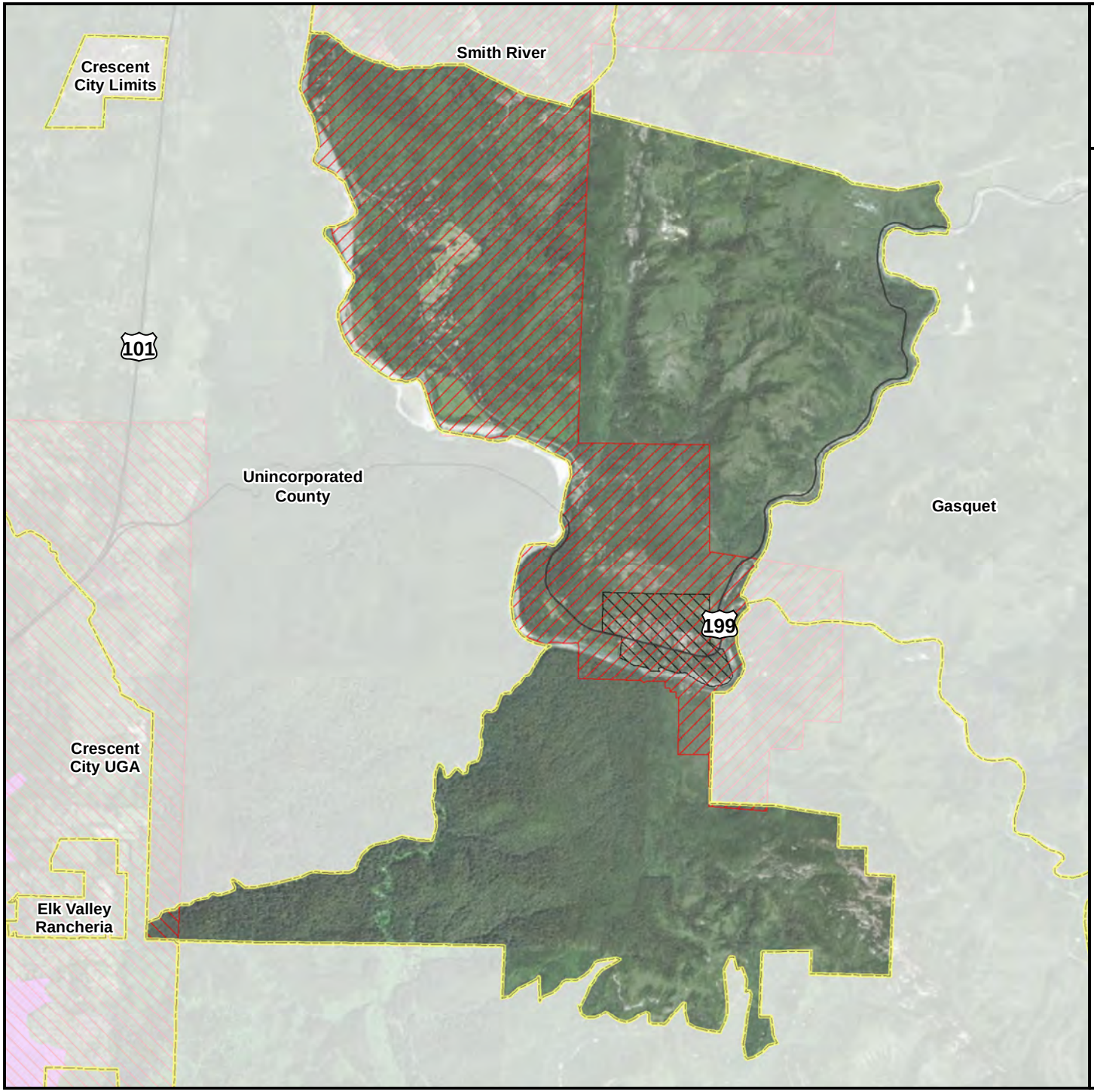
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Hiouchi Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

Big Rock Community Services District

Crescent Fire Protection District

Smith River Fire Protection District

0 0.5 1 2

Miles

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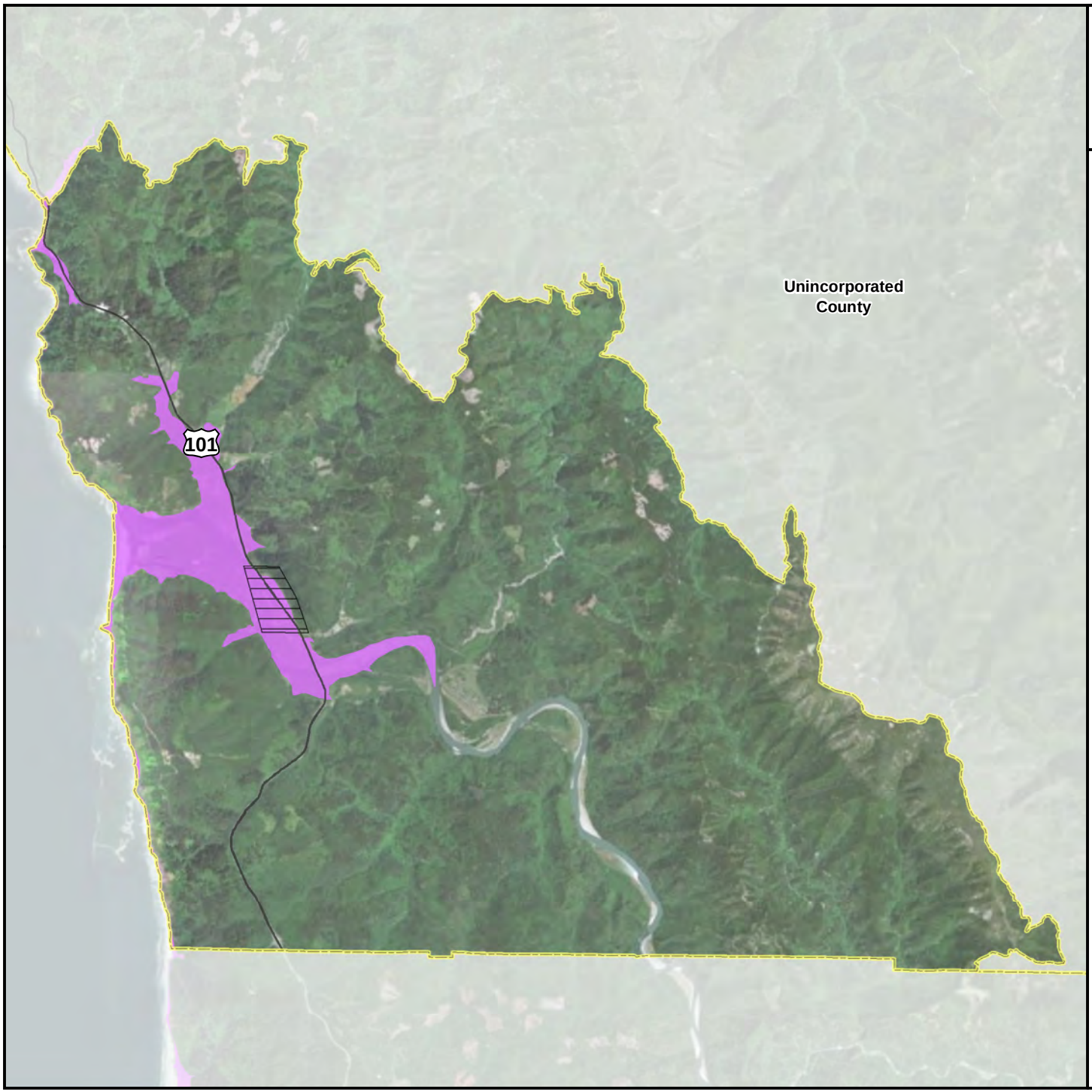
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Klamath Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

Klamath Community Services District

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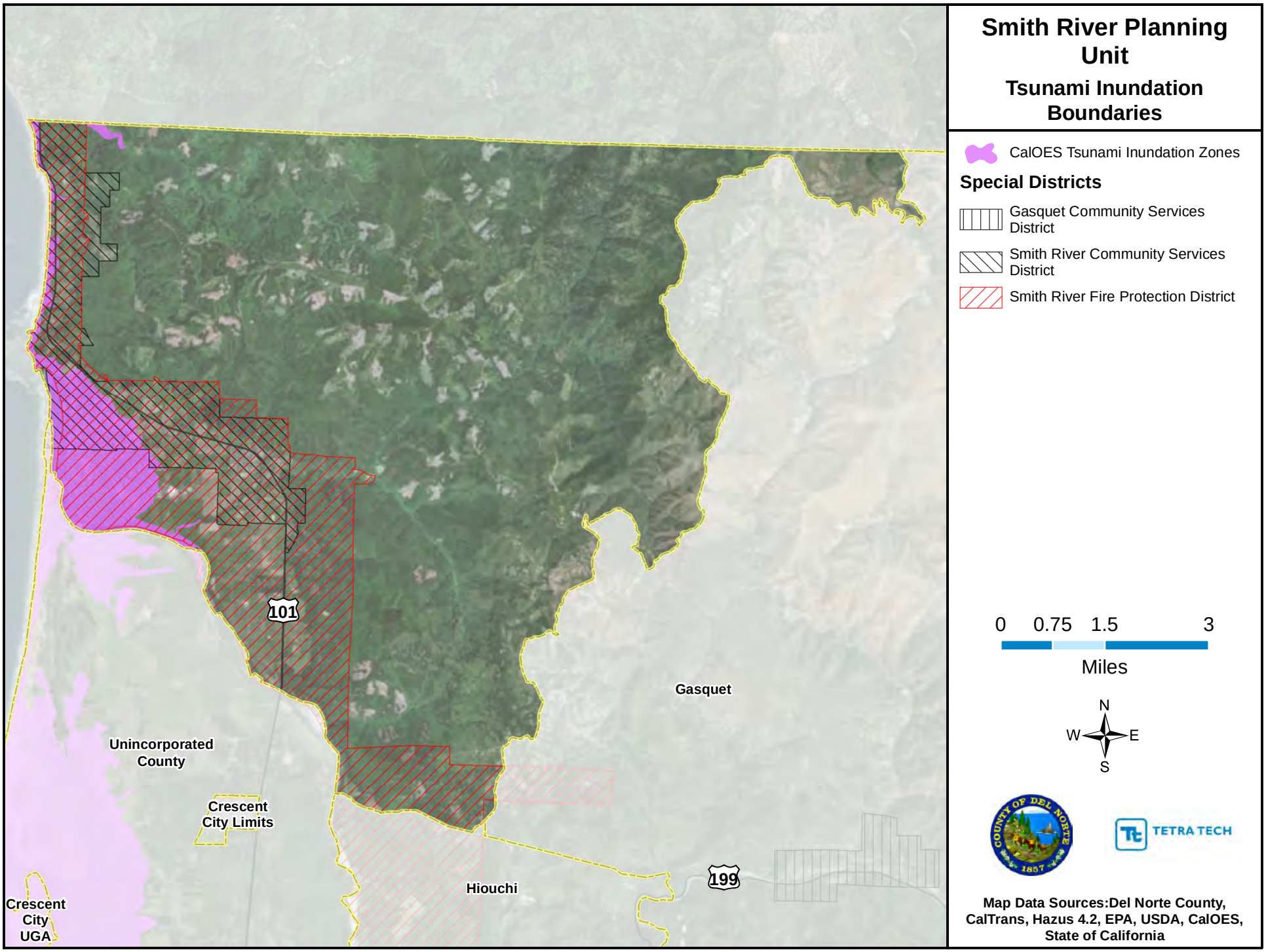
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California


Smith River Planning Unit
Tsunami Inundation Boundaries
CalOES Tsunami Inundation Zones
Special Districts
Gasquet Community Services District
Smith River Community Services District
Smith River Fire Protection District
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Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California
TETRA TECH
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Gasquet
Unincorporated County
Crescent City Limits
Hiouchi
Crescent City UGA

Unincorporated County Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

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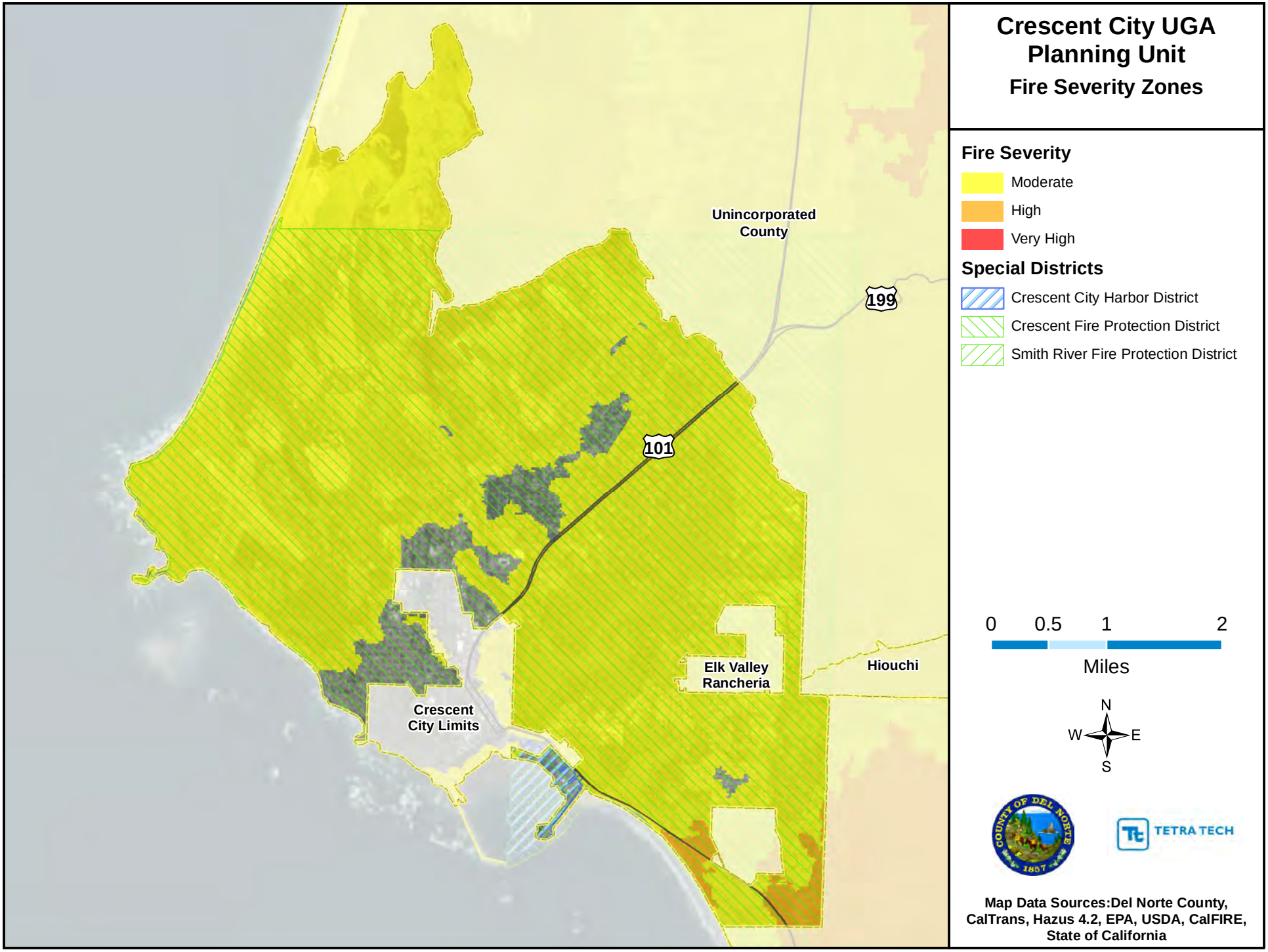

Crescent City UGA Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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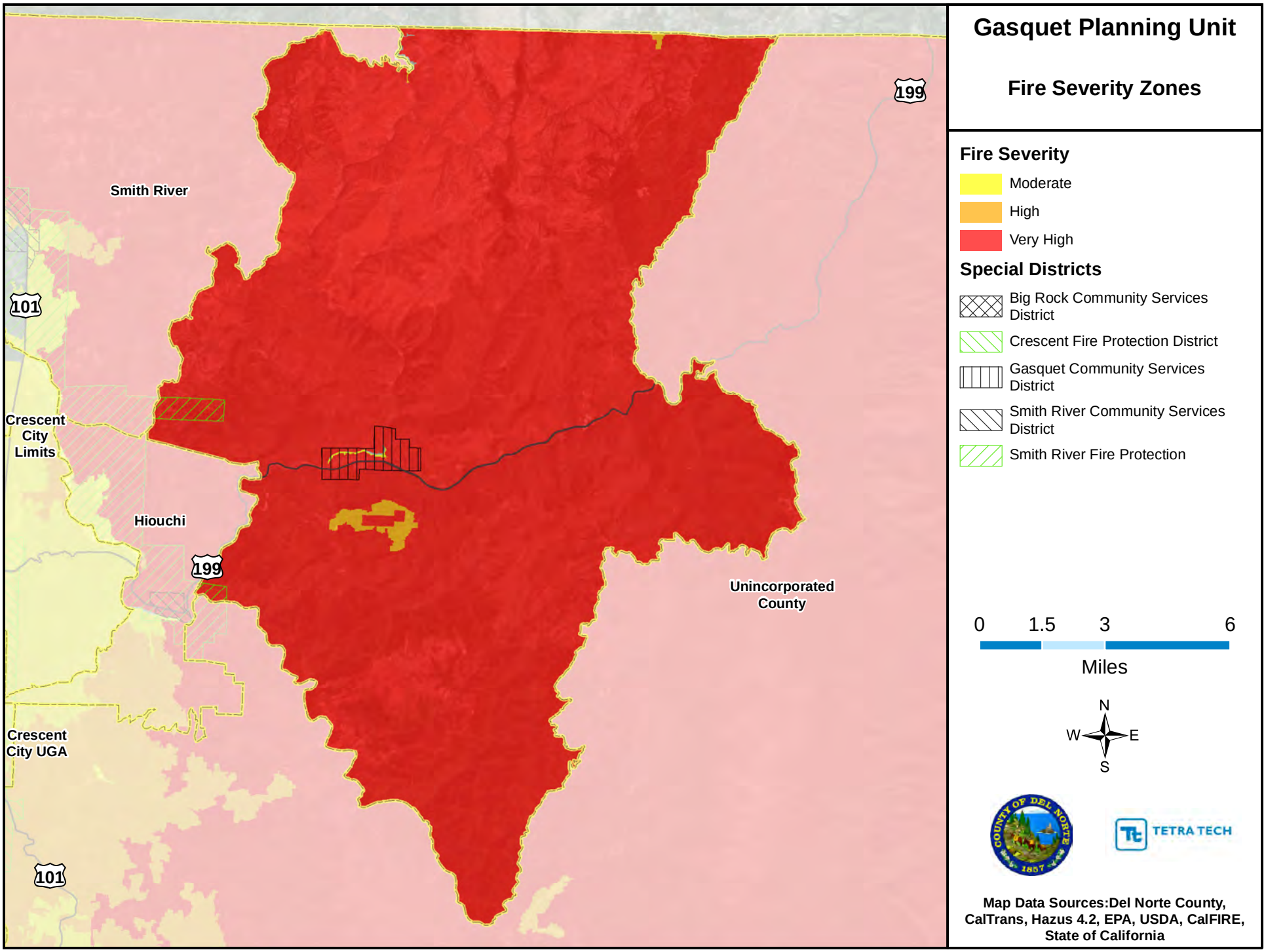
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California



Gasquet Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Gasquet Community Services District
- Smith River Community Services District
- Smith River Fire Protection

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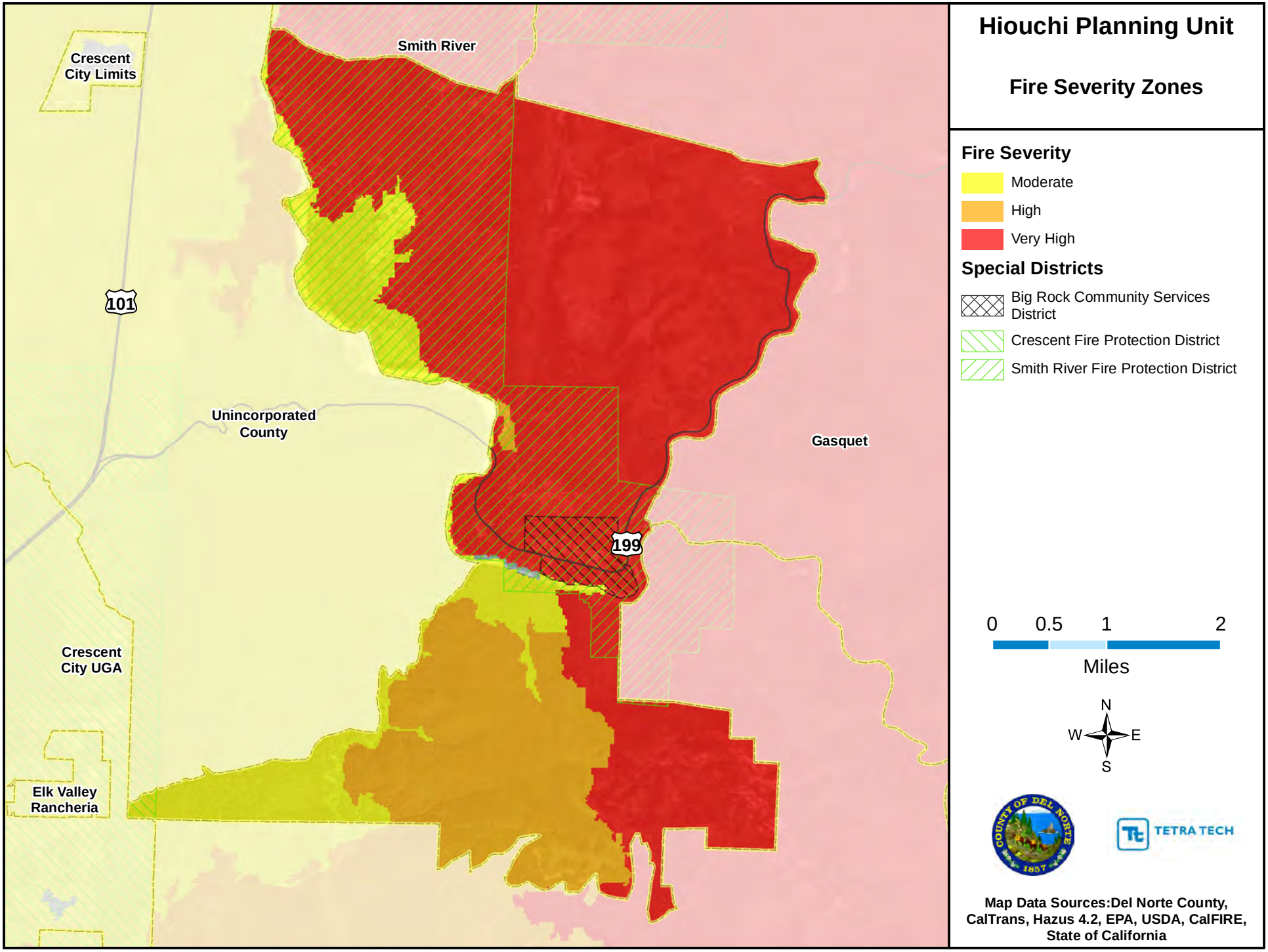
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California



Hiouchi Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Big Rock Community Services District
- Crescent Fire Protection District
- Smith River Fire Protection District

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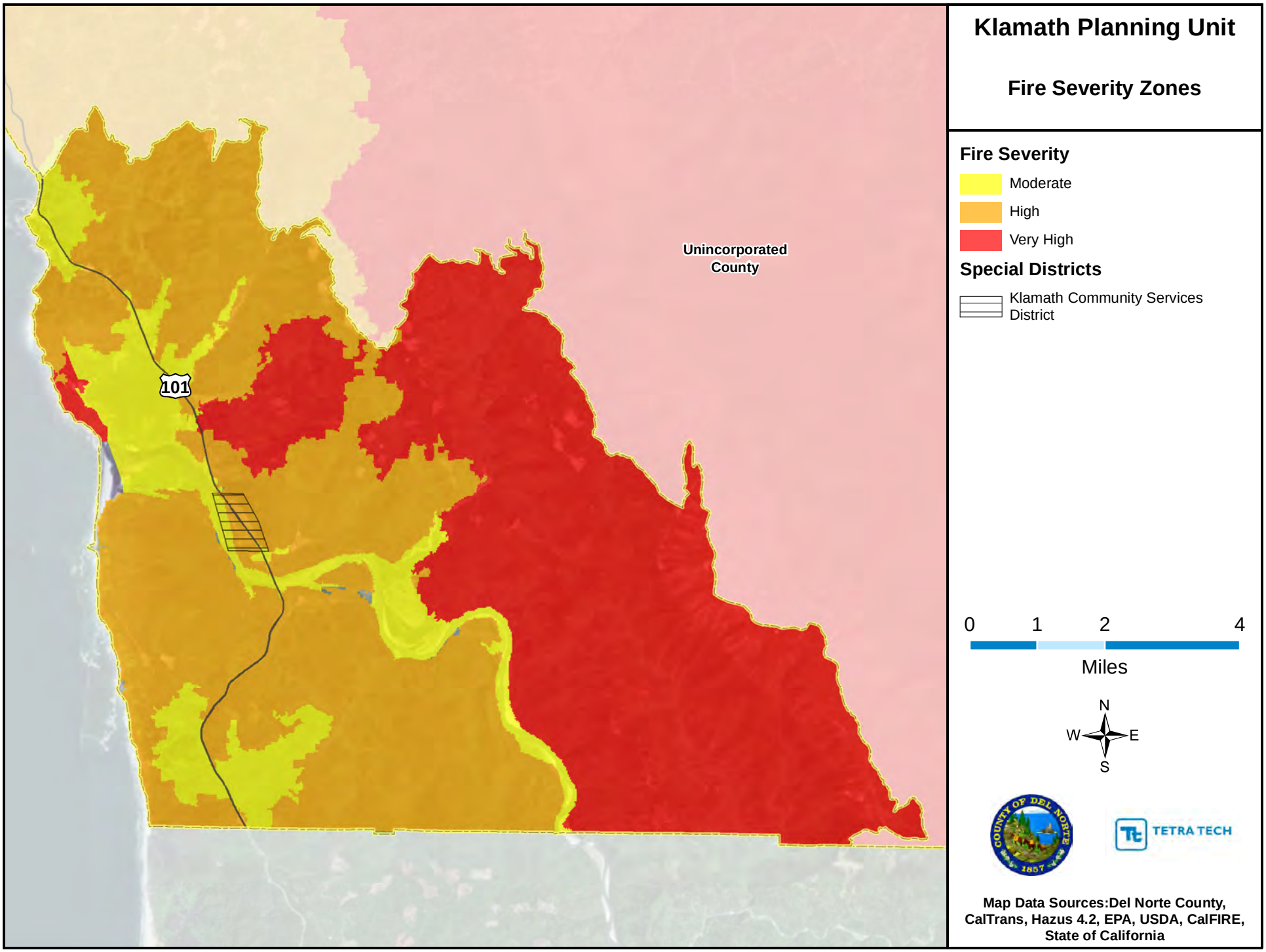
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California



Klamath Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Klamath Community Services District

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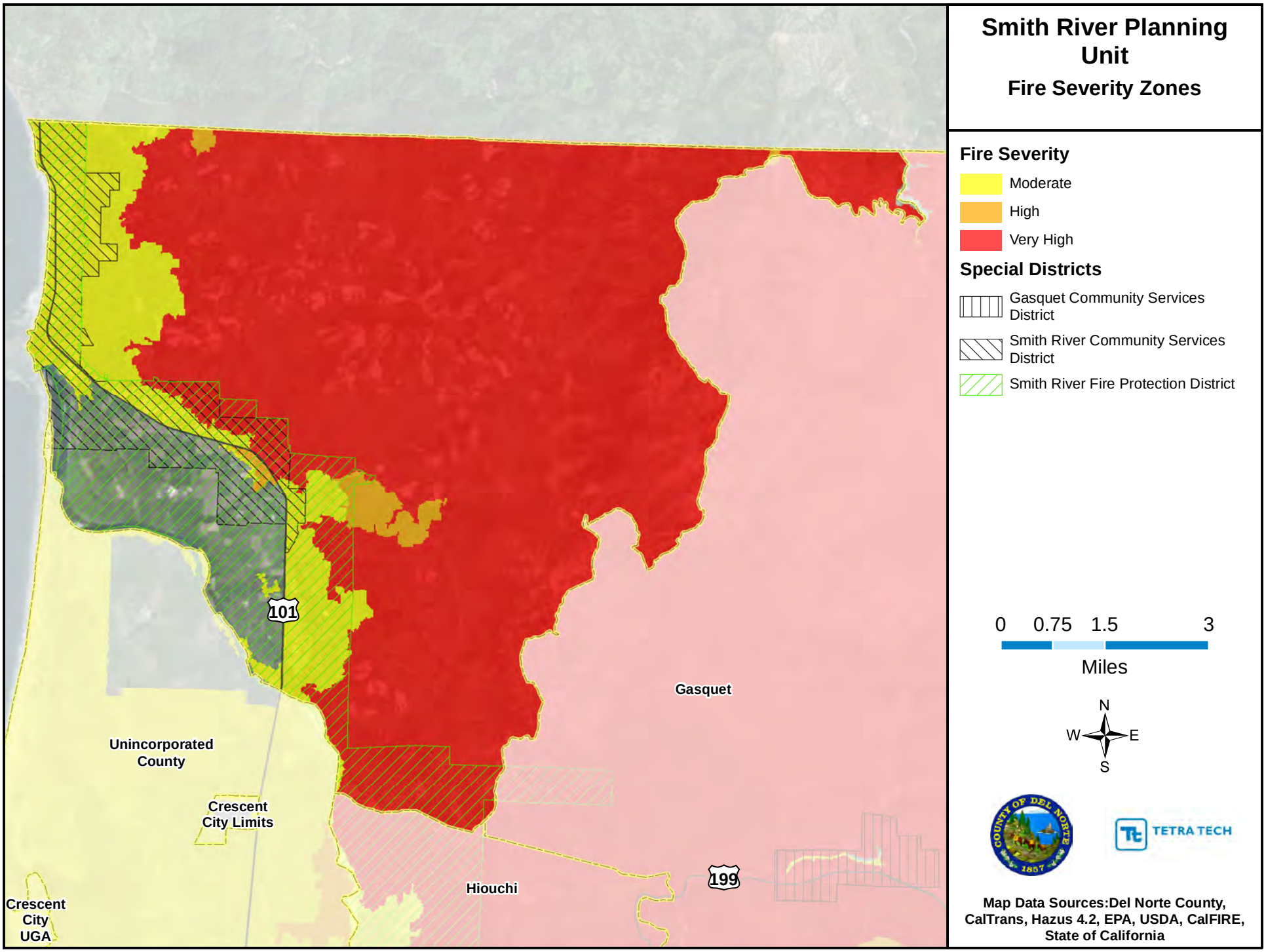
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California


Smith River Planning Unit
Fire Severity Zones
Fire Severity
Moderate
High
Very High
Special Districts
Gasquet Community Services District
Smith River Community Services District
Smith River Fire Protection District
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Gasquet
Unincorporated County
Crescent City Limits
Hiouchi
Crescent City UGA
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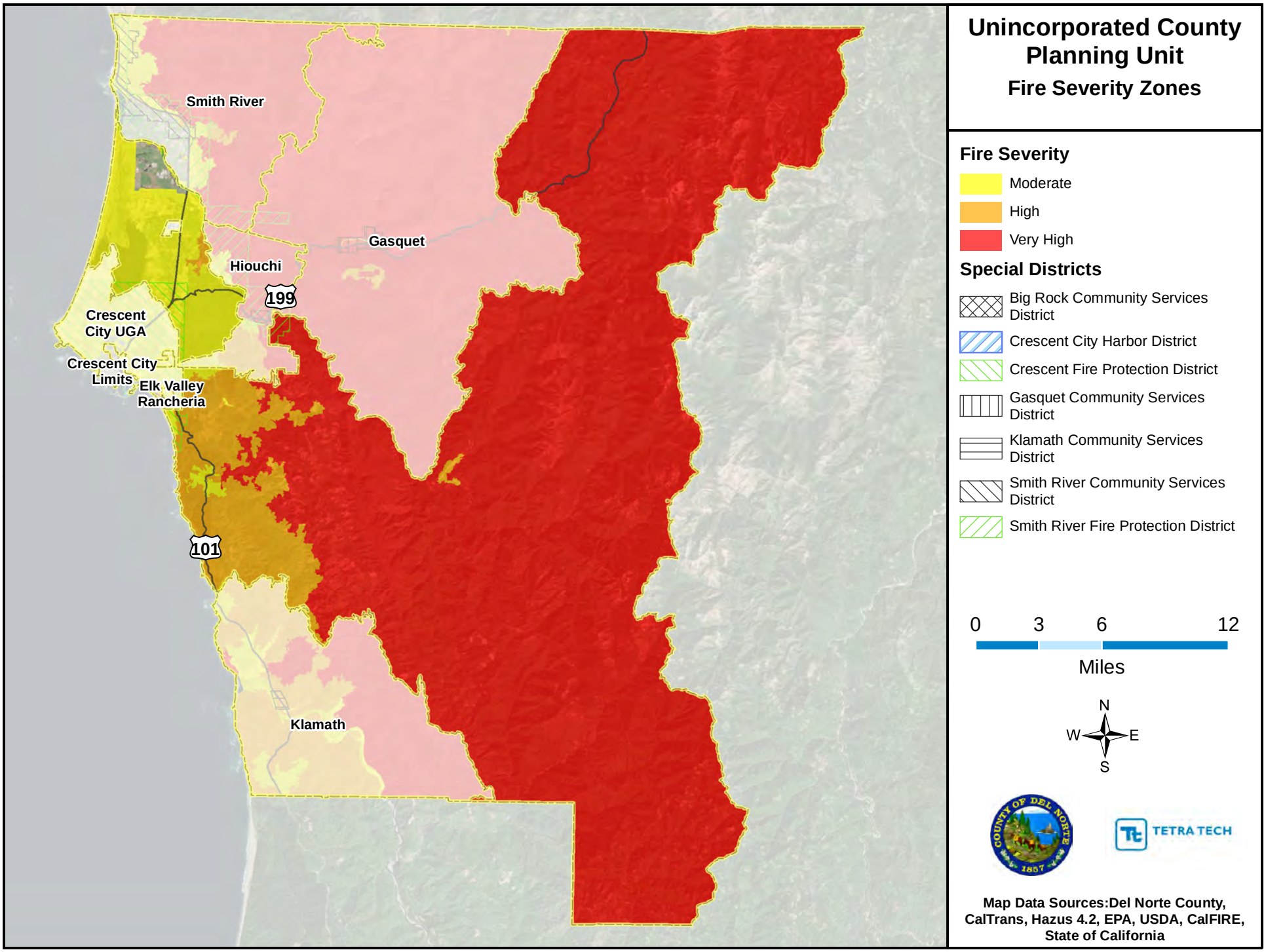
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California



Unincorporated County Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Big Rock Community Services District
- Crescent City Harbor District
- Crescent Fire Protection District
- Gasquet Community Services District
- Klamath Community Services District
- Smith River Community Services District
- Smith River Fire Protection District

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TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California

2. CITY OF CRESCENT CITY

2.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Eric Taylor, Director of Community Development
377 "J" Street
Crescent City, CA 95531
Telephone: 707-464-9506
e-mail Address: etaylor@crescentcity.org

Alternate Point of Contact
Eric Wier, Director of Public Works
377 "J" Street
Crescent City, CA 95531
Telephone: 707-464-9506
e-mail Address: ewier@crescentcity.org

2.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—1854
- **Current Population**—6,389 (as of 1-1-2017)
- **Population Growth**—According to California Department of Finance, the overall population has decreased by approximately 16 percent since 2010, and growth decreased by approximately 1.89 percent per year from 2010 to 2017.
- **Location and Description**—Crescent City is the only incorporated city in Del Norte County and is California's northernmost coastal city, 350 miles north of San Francisco and 330 miles south of Portland, Oregon. The city is bordered by the ocean, broad beaches, coastal bluffs, forest and rural county residential development. U.S. Highway 101 bisects the 1.6 square miles of urbanized city land area.
- **Brief History**—The city was founded in 1853 when F.E. Weston set up a small mill to cut wood for the lumber industry. The city was incorporated in 1854. When Del Norte County formed in 1857, Crescent City became the County seat. The logging and fishing industries that historically made up the export-based economy caused boom and bust cycles of employment and population. With the decline of these industries, fluctuations in resident population have dropped. Pelican Bay State Prison was built in 1989, expanding the city limits and adding an inmate (or group quarters) population that effectively doubled the city's population. The city's population, including Pelican Bay, makes up roughly 30 percent of Del Norte County residents. As one of the few larger commercial areas within the predominantly rural northern coastal redwoods, the City generally has a higher proportion of land in commercial and service uses. Hotels and harbor uses serve the tourist and fishing industries. While there is a diverse housing stock, with many high-end beachfront homes, a high number tend to be modest wood frame rental units. The former thriving downtown commercial shopping district never recovered from the 1964 tsunami, in which much of the area was destroyed. Newer commercial development has centered on Highway 101.
- **Climate**—As a coastal town, the City has weather that remains cool throughout the year, with summer temperatures averaging 60-70 degrees Fahrenheit and winter temperatures averaging 40-50 degrees. Annual rainfall averages 75 inches per year, with the occasional severe winter storm bringing winds of up to 90 miles per hour. Due to its geography, and drainage to the ocean, flooding has not brought many

problems to the town. Crescent City has experienced tsunami conditions 17 times between 1943 and 1994, the most significant being the 1964 tsunami, which resulted in 12 fatalities.

- **Governing Body Format**—Crescent City has a City Manager/Council form of government with a five-member elected City Council. In 2017, the City employed 64 full-time and 25 part-time workers, more than 43 of whom are employed in public works activities. The City of Crescent City assumes responsibility for the adoption of this plan; The City Manager will oversee its implementation.

2.3 DEVELOPMENT TRENDS

Based on the data tracked by the California Department of Finance, Crescent City has experienced negative growth in population. The overall population has decreased by approximately 16 percent since 2010, with negative growth each year between 2010-2017. With this rate of growth, the anticipated development trends for Crescent City are considered low. Current projections indicate minimal growth, with elderly and young family households remaining a stable part of the community.

California state law requires that every county and city prepare and adopt a comprehensive long-range plan to serve as a guide for community development. Crescent City adopted its general plan pursuant to this state mandate in 2001, with an update to the housing element in 2014. Future growth and development will be managed as identified in the general plan.

Table 2-1 summarizes development trends in the performance period since development of the previous hazard mitigation plan and expected future development trends.

Table 2-1. Recent and Expected Future Development Trends

Criterion	Response					
Has your jurisdiction annexed any land since the development of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	No N/A					
Is your jurisdiction expected to annex any areas during the performance period of this plan? • If yes, please describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	No N/A N/A					
Are any areas targeted for development or major redevelopment in the next five years? • If yes, please briefly describe, including whether any of the areas are in known hazard risk areas	No N/A					
How many permits for new construction were issued in your jurisdiction since the development of the previous hazard mitigation plan?		2012	2013	2014	2015	2016
	Single Family	0	0	0	0	0
	Multi-Family	0	0	1	0	0
	Other (commercial, mixed use, etc.)	0	0	1	1	0
Please provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: 0 • Landslide: 0 • High Liquefaction Areas: 0 • Tsunami Inundation Area: 0 • Wildfire Risk Areas: 0					
Please describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	The City of Crescent City commercial districts are nearly built out. It is anticipated that future development will include demolition or retrofit of existing buildings. There are undeveloped residential parcels scattered throughout the City however, construction of new residential units is slow.					

2.4 CAPABILITY ASSESSMENT

City of Crescent City has performed an inventory and analysis of existing capabilities, plans, programs and policies that enhance its ability to implement mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities is presented in Table 2-2.
- Development and permitting capabilities are presented in Table 2-3.
- An assessment of fiscal capabilities is presented in Table 2-4.
- An assessment of administrative and technical capabilities is presented in Table 2-5.
- An assessment of education and outreach capabilities is presented in Table 2-6.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 2-7.
- Classifications under various community mitigation programs are presented in Table 2-8.
- The community's adaptive capacity for the impacts of climate change is presented in Table 2-9.

Table 2-2. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	No
Comment: Unified Building Code, California Building Code adopted 2016, Electrical, mechanical, plumbing 2016 California Code of Regulations Chapter 15.04				
Zoning Code	Yes	No	Yes	No
Comment: Crescent City Municipal Code Title 17 (zoning)—Ord. 700 § 5 (Exhibit A (part)), 2003: Ord. 695 § 2 (part), 2003				
Subdivisions	Yes	No	Yes	No
Comment: Crescent City Municipal Code Title 16 (subdivisions) – Ord. 587 (part), 1983; prior code § 29-1001				
Stormwater Management	Yes	No	No	No
Comment: SMC Chapter 12.36, Title 12.-Ord. 697 § 2 (part), 2003: Ord. 695 § 2 (part), 2003				
Post-Disaster Recovery	No	No	No	No
Comment: None identified				
Real Estate Disclosure	Yes	Yes	Yes	No
Comment: CA. State Civil Code 1102 requires full disclosure on Natural hazard exposure of the sale/re-sale of any and all real property.				
Growth Management	Yes	No	Yes	No
Comment: The City is in compliance with State growth management mandates via 2001 adoption of General Plan.				
Site Plan Review	Yes	No	No	No
Comment: Unified Building Code, California Building Code adopted 2016				
Environmental Protection	Yes	No	Yes	No
Comment: The City complies with the California Environmental Quality Act.				
Flood Damage Prevention	Yes	No	No	No
Comment: Flood Damage prevention Ord: Crescent City Municipal Code, Chapter 15.32 (Ord. No. 802, § 1, 1-22-2018)				
Emergency Management	Yes	No	Yes	No
Comment: The City is compliance with State & Federal Emergency Management Training (IS 100, 200, 700 & 800).				
Climate Change	Yes	No	Yes	No
Comment: AB 691 requires all trustees of state lands with annual gross revenues exceeding $250,000 to prepare and submit an analysis of sea level rise adaptation strategies to the State Lands Commission.				
Other:	N/A	N/A	N/A	N/A
Comment: None identifies				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Planning Documents				
General Plan	Yes	No	Yes	Yes
Is the plan compliant with Assembly Bill 2140? Yes				
Comment: Adopted 2001, Housing Element 2014				
Capital Improvement Plan	Yes	No	No	No
How often is the plan updated? Annually				
Comment: Five-year CIP for roads, water and sewer				
Floodplain or Watershed Plan	No	No	No	No
Comment: None identified				
Stormwater Plan	Yes	No	No	No
Comment: City of Crescent City General Plan, Local Coastal Plan Extract Policy Document, 2011				
Urban Water Management Plan	Yes	No	Yes	No
Comment: 2015 Urban Water Management Plan for Crescent City, CA May 26, 2016				
Habitat Conservation Plan	No	No	No	No
Comment: None identified				
Economic Development Plan	No	No	No	No
Comment: None identified				
Shoreline Management Plan	Yes	Yes	Yes	Yes
Comment: Adopted with General Plan Feb. 1999, updated in 2011 (City of Crescent City, California Coastal Commission).				
Community Wildfire Protection Plan	No	No	No	No
Comment: None identified				
Forest Management Plan	No	No	No	No
Comment: None identified				
Climate Action Plan	No	No	No	No
Comment: None identified				
Comprehensive Emergency Management Plan	Yes	Yes	No	No
Comment: Adopted 2003 (County of Del Norte)				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	No	No	No
Comment: None identified				
Post-Disaster Recovery Plan	No	No	No	No
Comment: None identified				
Continuity of Operations Plan	No	No	No	No
Comment: None identified				
Public Health Plan	No	Yes	No	No
Comment: County of Del Norte				
Other:	N/A	N/A	N/A	N/A
Comment: None identified				

Table 2-3. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? • If no, who does? If yes, which department?	Yes N/A
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	No

Table 2-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use? (Yes/No/Don't Know)
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes-Water & Sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	None

Table 2-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Department—1 city planner and 1 city engineer.
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works Department—1 Director; 1 Wastewater Treatment Plant Supervisor; 1 Project Manager, 1 Engineering Technician. City can also contract for these services
Planners or engineers with an understanding of natural hazards	Yes	City Planner, Public Works
Staff with training in benefit/cost analysis	Yes	Finance Director
Surveyors	Yes	No licensed Surveyors on City Staff. City can and has contracted for survey work on as needed basis.
Personnel skilled or trained in GIS applications	Yes	The Admin Department includes an Information Technology (IT) division that include 1 senior GIS Analyst
Scientist familiar with natural hazards in local area	Yes	No Scientists on City Staff. City can and has contracted for survey work on as needed basis.
Emergency Manager	Yes	City Manager, Fire Chief, County Office of Emergency Services
Grant writers	Yes	Contract, City Planner
Other	No	

Table 2-6. Education and Outreach Capability

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	Yes Cal OES MyHazards/Tsunami Warning Center
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	No N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly describe.	No N/A
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	No N/A
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	Yes Tsunami Sirens

Table 2-7. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	City Municipal Code Chapter 15.32.040 designates the director of community development as the floodplain administrator.
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	January 2018
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	2017
Does your jurisdiction have outstanding NFIP compliance violations that need to be addressed? • If so, please state what they are.	No N/A
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, please state why.	Yes N/A
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	Yes Floodplain Manager Certification Base Flood Elevation Determination in A zone
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving CRS Classification? • Is your jurisdiction interested in joining the CRS program?	No N/A No
How many flood insurance policies are in force in your jurisdiction?[a] • What is the insurance in force? • What is the premium in force?	23 $6,544,600 $35,665
How many total loss claims have been filed in your jurisdiction?[a] • How many claims are still open/were closed without payment? • What were the total payments for losses?	2 0/0 $116,626

a. According to FEMA statistics as of December 31, 2017

Table 2-8. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 2-9. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: None provided	
Jurisdiction-level monitoring of climate change impacts	Low
Comment: None provided	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: None provided	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: None provided	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment: None provided	
Participation in regional groups addressing climate risks	Medium
Comment: None provided	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Medium
Comment: None provided	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: None provided	
Identified strategies for adaptation to impacts	Low
Comment: None provided	
Champions for climate action in local government departments	Low
Comment: None provided	
Political support for implementing climate change adaptation strategies	Medium
Comment: None provided	
Financial resources devoted to climate change adaptation	Low
Comment: None provided	
Local authority over sectors likely to be negative impacted	Unsure
Comment: None provided	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Unsure
Comment: None provided	
Local residents support of adaptation efforts	Unsure
Comment: None provided	
Local residents' capacity to adapt to climate impacts	Low
Comment: None provided	
Local economy current capacity to adapt to climate impacts	Low
Comment: None provided	

Criterion	Jurisdiction Rating[a]
Local ecosystems capacity to adapt to climate impacts	Unsure
Comment: None provided	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

2.5 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

2.5.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **City of Crescent City General Plan Policy Document—**The 2011 Hazard Mitigation Plan was adopted by the City and incorporated into Section 7 Health & Safety of the City of Crescent City General Plan Policy Document. As such all projects that are regulated by the goals and policies of the General Plan will utilize data contained in the hazard mitigation plan as best available data for project planning and development.
- **City of Crescent City Local Coastal Program**—The Local Coastal Program (LCP) was updated in 2011 and has been adopted as part of the General Plan Policy Document. As such all projects regulated by the goals and policies of the City of Crescent City LCP will utilize data contained in the Local Hazard Mitigation Plan as best available date for project planning and development.

Resources listed in Section 2.11 were used to provide information for this annex on hazard events and local capabilities within the jurisdiction.

2.5.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, the City will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan in actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **General Plan**—The City of Crescent City General Plan (GP) Policy Document will need to be updated beginning in the year 2020. The GP update is an opportune time to incorporate hazard mitigation plan data in general plan land use planning.
- **Shoreline Management Plan**—was adopted as part of the 2001 City of Crescent City General Plan Policy Document. The Local Hazard Mitigation Plan has been adopted into Section 7 Health & Safety of the General Plan therefore the City will use the hazard mitigation plan and subsequent updates as a guide

for best available data regarding natural hazards when reviewing projects within the Coastal Zone. Furthermore, future updates to the LCP will utilize information derived from the hazard mitigation plan with an emphasis on shoreline development and sea level rise.

2.6 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 2-10 lists past occurrences of natural hazards for which specific damage was recorded in City of Crescent City. Other hazard events that broadly affected the entire planning area, including City of Crescent City, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 2-10. Past Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Winter Storms	N/A	12/9/16	$1,764,428
Tsunami	DR-1968	3/11/2011	$83,909
Earthquake	N/A	2/26/2007	N/A
Tsunami	N/A	1/13/2007	N/A
Tsunami	N/A	11/15/2006	N/A
Earthquake	N/A	7/16/2006	N/A
Earthquake	N/A	3/25/2006	N/A
Severe Storms, flooding, landslides	DR-1628	2/3/2006	$7,650,000[a]
Earthquake	N/A	6/14/2005	N/A
Earthquake	N/A	8/15/2003	N/A
State Road damage	GP-2003	1/1/2003	N/A
Earthquake	N/A	6/17/2002	N/A
Earthquake	N/A	9/20/2001	N/A
Earthquake	N/A	1/13/2001	N/A
Earthquake	N/A	3/16/2000	N/A
El Nino Floods	DR-1203	2/9/1998	N/A
Severe storms, Flooding	DR-1155	1/4/1997	$15,150,000[a]
Severe Winter Storms	N/A	12/9/1995	$8,400,000[a]
Severe Winter storms	DR-1044	1/13/1995	N/A
Fishing Losses (El Nino effect)	DR-1038	9/20/1994	$30,300,000
Tsunami	N/A	9/1/1994	N/A
Earthquake	DR-943	4/25/1992	$17, 829,642[b]
Tsunami	N/A	4/25/1992	N/A
Wildland Fires (Lightning)	GP-1987	9/10/1987	$3,571,428[a]
Tsunami	N/A	5/7/1986	N/A
Severe Storms, Flooding	DR-758	2/18/1986	N/A
Winter Storms	DR-677	2/9/1983	N/A
Tsunami	N/A	10/3/1974	N/A
Severe Storms, Flooding	DR-329	4/5/1972	$6,817,618
Tsunami	N/A	7/26/1971	N/A

a. Hazards & Vulnerability Research Institute (2008). The Spatial Hazard Events and Losses Database for the United States, Version 6.2 [Online Database]. Columbia, SC: University of South Carolina. Available from http://www.sheldus.org

b. Total amount for all counties declared under the event.

2.7 HAZARD RISK RANKING

Table 2-11 presents a local ranking for City of Crescent City of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 2-11. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Tsunami[i]	(3 x 15) = 45	High
2	Earthquake[a]	(3 x 12) = 36	High
3	Severe weather[b]	(3 x 9) = 27	Medium
4	Flooding[d]	(3 x 6) = 18	Medium
5	Drought[f]	(3 x 4) = 12	Low
6	Landslide[e]	(3 x 3) = 9	Low
6	Wildland fire[c]	(3 x 3) = 9	Low
7	Sea level rise[h]	(2 x 1) = 2	Low
8	Dam failure[g]	(0 x 0) = 0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on property and low impact on economy.
c. Based on Very High and High Fire Severity Zones. No people or property are located in very high or high severity zones; however, smoke from nearby fires may impact some people in the City.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, low impact on property and medium impact on economy.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise. No people or property are exposed, but sea level rise may impact economically important assets in coastal areas.
i. Based on composite possible tsunami events

2.8 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction.

2.8.1 Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 0

2.8.2 Other Noted Vulnerabilities

The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Tsunami
  - It is estimated that there are 417 structures located in tsunami inundation areas including 230 residential properties and 164 commercial properties; however, there are only 23 flood insurance policies in force in the City.
- Earthquake
  - More than 87 percent of the housing stock was built before modern seismic codes were in force
- Severe weather
  - Power disruption can occur as a result of severe weather events.
- Flooding
  - In 2017 FEMA revised the Flood Insurance Rate Maps for the City of Crescent City. The revised maps are no longer based on the 1964 Tsunami and only reflect storm surge and flooding potential associated with the Elk Creek Floodplain. As a result, many of the critical facilities that were in a mapped 1-percent annual chance flood zone have been removed. However, critical facilities used for storing fuel and many commercial structures are located within a 1 percent chance flood zone.
- Landslides
  - Coastal bluffs and public infrastructure located along the bluffs have been impacted by winter storms. Several locations along the coastline are experiencing landslides resulting in coastal bluff retreat. City streets, parking lots, storm drains and water and sewer lines are at risk.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 2.10.

2.9 STATUS OF PREVIOUS PLAN ACTIONS

Table 2-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

2.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 2-13 lists the actions that make up the City of Crescent City hazard mitigation action plan. Table 2-14 identifies the priority for each action. Table 2-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 2-12. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
CS-1—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.	X		X	CC-3
Comment: The City participated in the 2018 update to the 2010 hazard mitigation plan.				
CS-2—Support countywide initiatives identified in Volume 1.	X		X	N/A
Comment: The City supported the mitigation initiative identified in the 2010 plan and will support the updated initiatives in the 2018 plan.				
CS-3—Survey and inventory lowest floor elevations of all existing structures (both private and public facilities) in VE and X zones, to identify vulnerable structures to target for mitigation.			X	CC-7
Comment: The action was slightly modified and carried forward to the updated action plan.				
CS-4—Replace, relocate and/or retrofit based on feasibility various critical city infrastructure: City Hall, fire station, water supply, storm drains, wastewater, clay sewer lines.	X		X	CC-1
Comment: Fire Station project has been completed & B Street sewer mainline has been replaced.				
CS-5—Structural/nonstructural seismic retrofit city fire station	X			N/A
Comment: Completed in 2016				
CS-6—Warehouse and/or relocate critical vehicles, equipment and repair materials outside of identified hazard areas			X	CC-10
Comment: None provided				
CS-7—Review, improve and update all public awareness materials for disaster evacuation routes and plans; include all social service providers and care facilities in evacuation awareness and planning	X			N/A
Comment: This is an ongoing activity				
CS-8—Develop a post disaster action plan that includes grant funding, debris removal and long-term recovery planning components, addressing both public and private assets			X	CC-11
Comment: None provided				
CS-9—Establish a continuity-of-operations plan with phased return to normal operations			X	CC-12
Comment: None provided				
CS-10—Identify existing structures not up to adopted IBC through aggressive code enforcement	X		X	CC-13
Comment: Ongoing have addressed several structures				
CS-11—Continue to maintain compliance and good standing under the National Flood Insurance Program (NFIP).	X		X	CC-4
Comment: Updated FDP ordinance in 2017				
CS-12—Consider participation in the NFIP's Community Rating System program.			X	CC-14
Comment: City will continue to consider participation; however, the City does not currently have a large policy base.				
CS-13—Consider the adoption of higher regulatory standards where appropriate to mitigate the impacts of natural hazards, most notable the flood and tsunami hazards.		X		
Comment: Not a community priority at this time				
CS-14—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.			X	CC-1
Comment: City has not had the financial capability over the performance period of the 2010 plan to make progress on this action.				

Table 2-13. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CC-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard. This includes critical facilities and infrastructure such as, City Hall, water supply infrastructure, storm drains, wastewater infrastructure, and clay sewer lines.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire, sea level rise						
Existing	3, 4, 10	Planning	Building	High	HMGP, PDM, FMA	Short-term
CC-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the General Plan and review of projects within the coastal zone.						
Hazards Mitigated: Drought, earthquake, flooding, landslide, tsunami, wildland fire, sea level rise						
New and Existing	1, 3, 4, 5, 7, 8, 10	Planning	N/A	Low	Staff Time, General Funds	Ongoing
CC-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 5, 8	County of Del Norte	City of Crescent City	Low	Staff Time, General Funds	Short-term
CC-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Flooding, severe weather, tsunami, sea level rise						
New and Existing	1, 3, 5, 7, 8, 10	City of Crescent City	FEMA	Low	Staff Time, General Funds	Ongoing
CC-5—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to conducting an analysis of sea level rise adaptation strategies pursuant to AB 619.						
Hazards Mitigated: Flooding, tsunami, sea level rise						
New and Existing	1, 3, 4, 5, 6, 7, 8	Planning	N/A	Low	Staff Time, General Funds, Grant Funding	Short-term
CC-6—Retrofit wastewater treatment plant membrane bioreactor to accept backup generator for backup power						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 6, 9	Public Works	N/A	Medium	HMGP, PDM	Short-term
CC-7—Survey FEMA designated A zone to determine base flood elevation Survey and inventory lowest floor elevations of all existing structures (both private and public facilities) in A and X zones, to identify vulnerable structures to target for mitigation.						
Hazards Mitigated: Flooding, tsunami, sea level rise						
Existing	3, 4, 8, 10	Public Works	Contract Surveyor	Medium	Generals Funds	Short-term
CC-8—Conduct coastal bluff stabilization to prevent shoreline retreat and protect public infrastructure.						
Hazards Mitigated: Landslide						
Existing	2, 3, 4, 6	Public Works	Planning	Medium	General Funds; HMGP, PDM	Short-term
CC-9—Upgrade and install additional storm drain lines to relive periodic flooding in downtown Crescent City.						
Hazards Mitigated: Severe weather						
New and Existing	1, 2, 4	Public works	N/A	Medium	General Funds; Capital Improvements	Long-term
CC-10—Warehouse and/or relocate critical vehicles, equipment and repair materials outside of identified hazard areas						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 9	Public Works	Police and Fire	Medium	General Fund	Short-term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CC-11—Develop a post disaster action plan that includes grant funding, debris removal and long-term recovery planning components, addressing both public and private assets						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire, sea level rise						
New and Existing	1, 8, 10	Public Works	Building	Medium	General Fund, HMGP, PDM	Short-term
CC-12—Establish a continuity-of-operations plan with phased return to normal operations						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire						
New and Existing	2, 6, 9	Planning	Del Norte County Emergency Management	Medium	General Fund	Short-tern
CC-13—Identify existing structures not up to adopted IBC through aggressive code enforcement						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire						
Existing	3, 4	Planning Department	City Council	Medium	General Fund	Short-term
CC-14—Consider participation in the NFIP's Community Rating System program.						
Hazards Mitigated: Flooding, tsunami, sea level rise						
New and Existing	1, 4, 7	Planning Department	N/A	Low	General Fund	Short-term
CC-15—Conduct a structural/nonstructural seismic retrofit of the City Police Department						
Hazards Mitigated: Earthquake						
New and Existing	3, 4, 10	City of Crescent City	N/A	High	HMGP, PDM	Short-term

Table 2-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
CC-1	3	High	High	Yes	Yes	No	Medium	High
CC-2	7	Medium	Low	Yes	No	Yes	High	Low
CC-3	3	Low	Low	Yes	No	Yes	High	Low
CC-4	6	Medium	Low	Yes	No	Yes	High	Low
CC-5	7	Medium	Low	Yes	No	Yes	High	Medium
CC-6	3	High	Medium	Yes	Yes	No	Medium	High
CC-7	4	Medium	Medium	Yes	No	Yes	High	Low
CC-8	4	High	Medium	Yes	Yes	Possibly	Medium	High
CC-9	3	Medium	Medium	Yes	No	Possibly	Medium	Low
CC-10	2	Medium	Medium	Yes	No	Yes	High	Low
CC-11	3	Medium	Medium	Yes	Yes	Possibly	Medium	High
CC-12	3	Medium	Medium	Yes	No	Yes	High	Low
CC-13	2	High	Medium	Yes	No	Yes	High	Low
CC-14	3	Low	Low	Yes	No	Yes	High	Low
CC-15	3	High	High	Yes	Yes	No	Medium	High

a. See the introduction to this volume for explanation of priorities.

Table 2-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Tsunami	2, 4	1, 7, 13			6, 10, 12			3, 5, 11, 14
Earthquake	2	1, 13, 15			6, 10, 12, 15			3, 11
Severe weather	4	9, 13			6, 10			3
Flooding	2, 4	7, 13			6, 10, 12			3, 5, 11, 14
Drought	2							3
Landslide	2	1, 13			6, 10, 12	8		3, 11
Wildland fire	2	1, 13			6, 10, 12			3, 11
Sea level rise	2, 4	1, 7			10		1, 2, 5	3, 5, 11, 14
Dam failure	—	—	—	—	—	—	—	—

a. See the introduction to this volume for explanation of mitigation types.

2.11 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

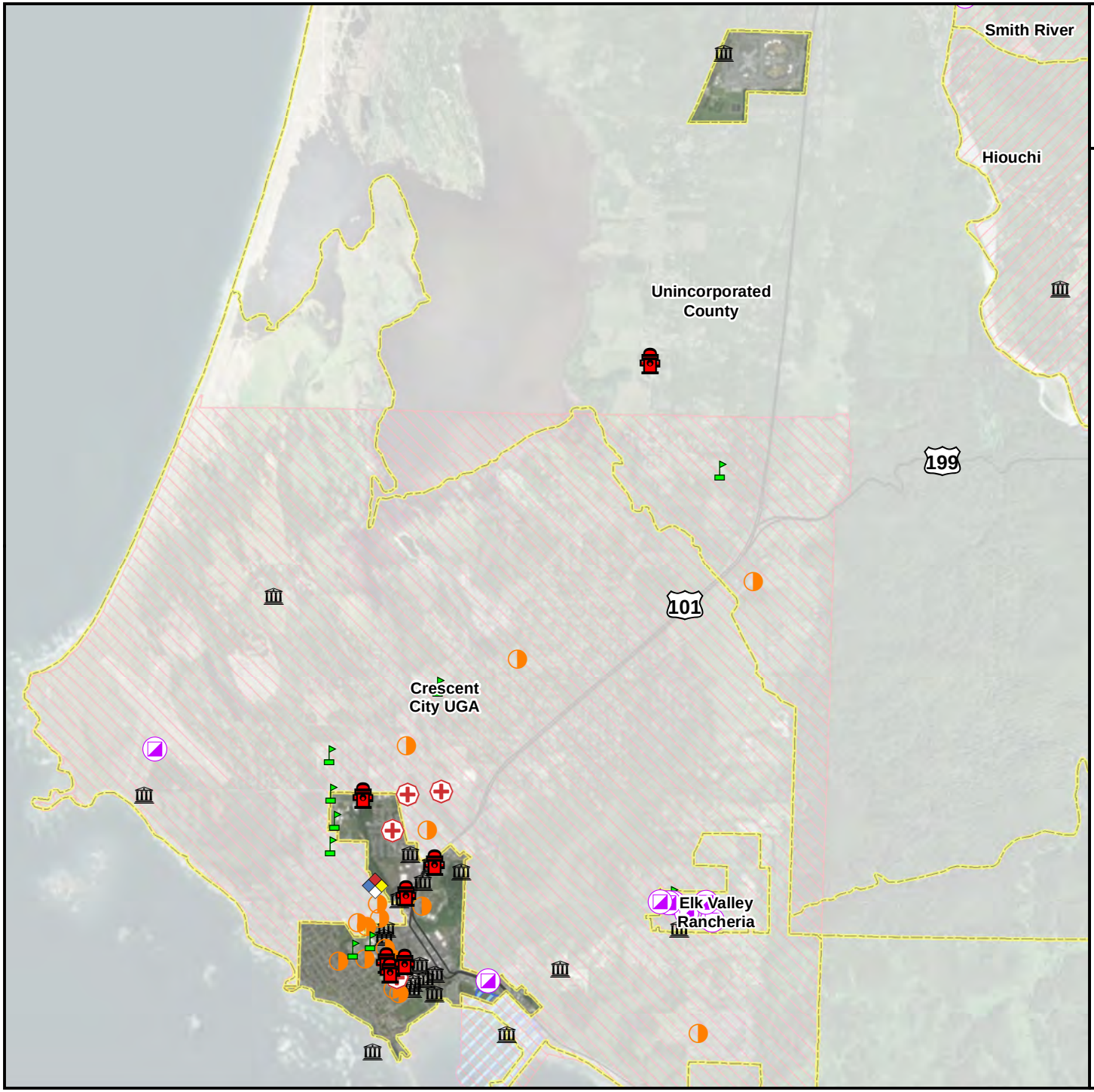
2.11.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **City of Crescent City Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Crescent City Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Technical Reports and Information—**The following **o**utside resources and references were reviewed:
  - **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

2.11.2 Staff and Local Stakeholder Involvement in Annex Development

The City of Crescent City annex was developed over the course of several months with input from many City departments including Community Development, Finance, and Public Works. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. An action development meeting was held on March 5, 2018 and was attended by representatives from all previously listed department as well as the Interim City Manager. Once actions had been identified and compiled in the annex, a draft was internally circulated for comment.



Crescent City Limits Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Hazardous Materials
- Medical & Health Services
- Other Critical Function
- Protective Function
- Schools
- Societal Function

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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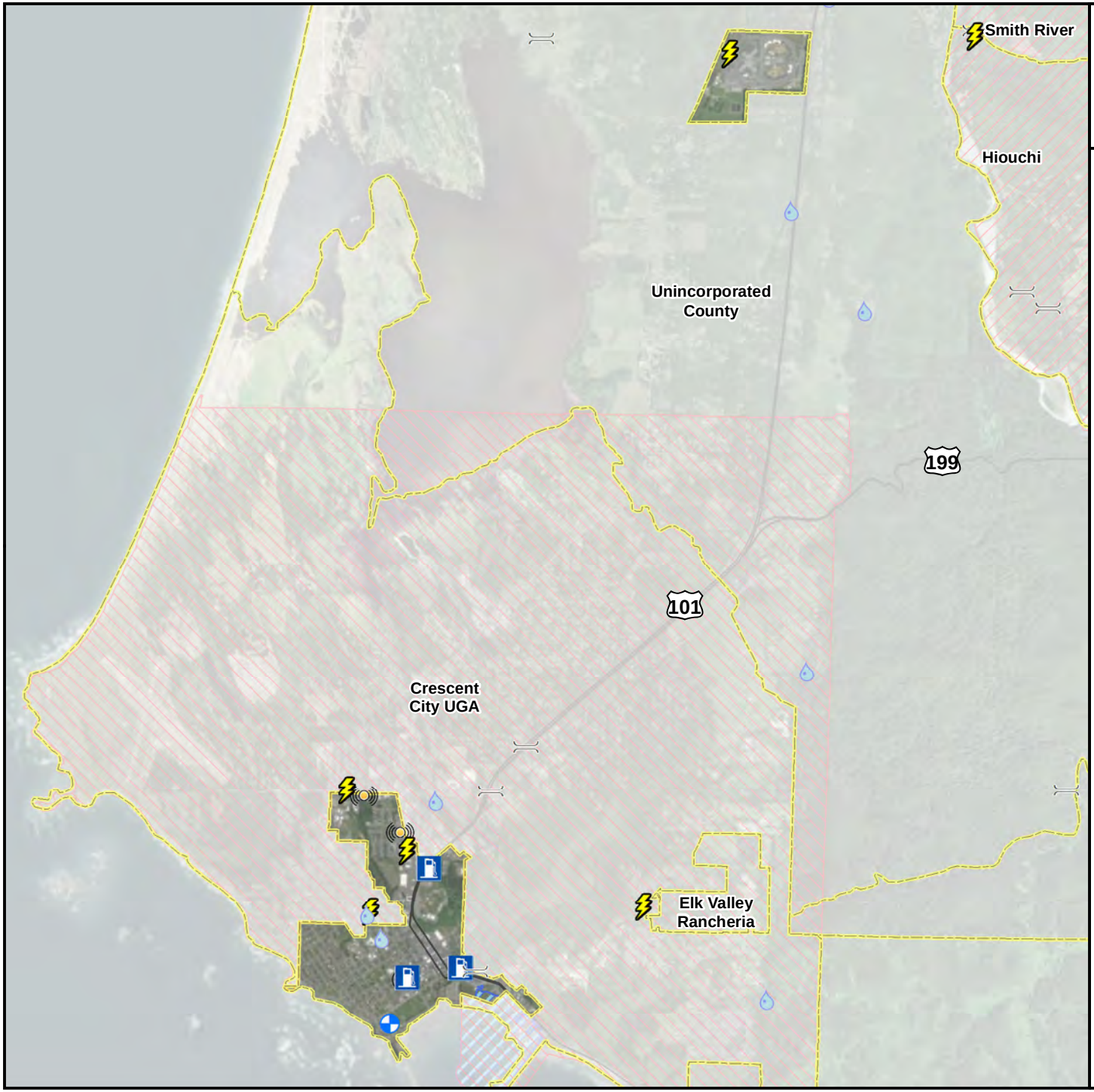
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Crescent City Limits Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Bridges
- Communication
- Fuel Storage
- Power
- Waste Water
- Water Supply

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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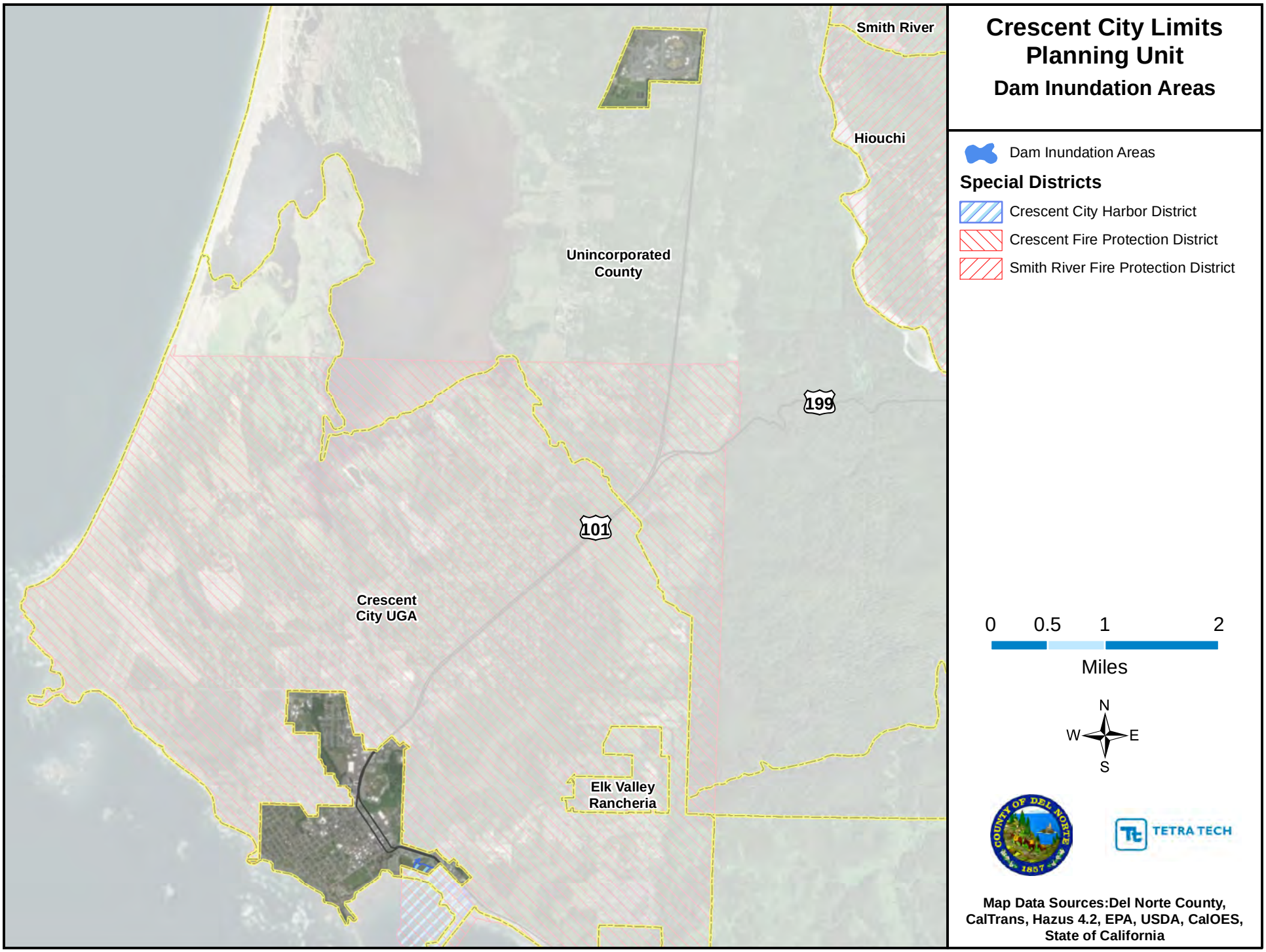
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Crescent City Limits Planning Unit

Dam Inundation Areas

Dam Inundation Areas

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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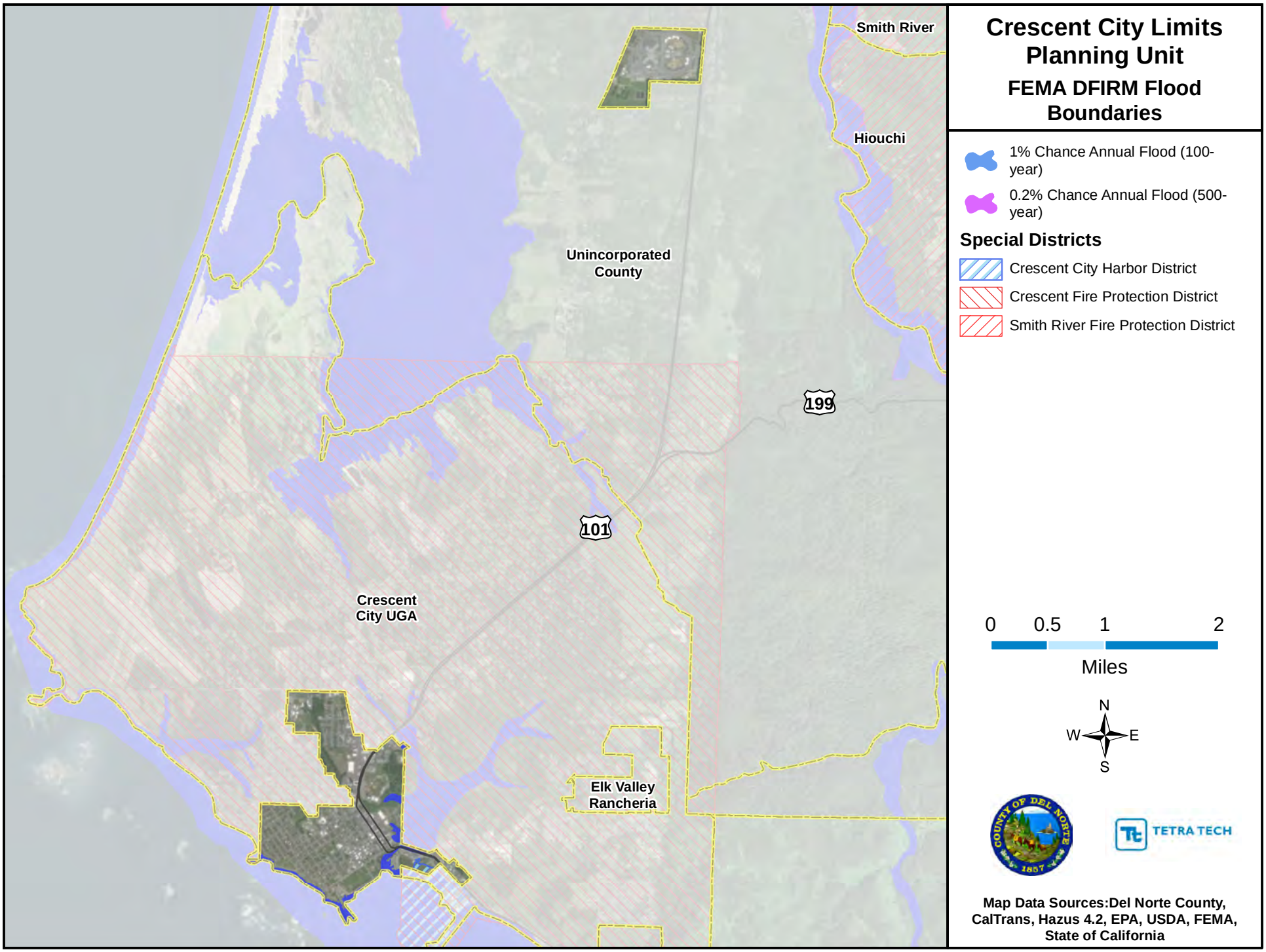
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Crescent City Limits Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Crescent City Harbor District

Crescent Fire Protection District

Smith River Fire Protection District

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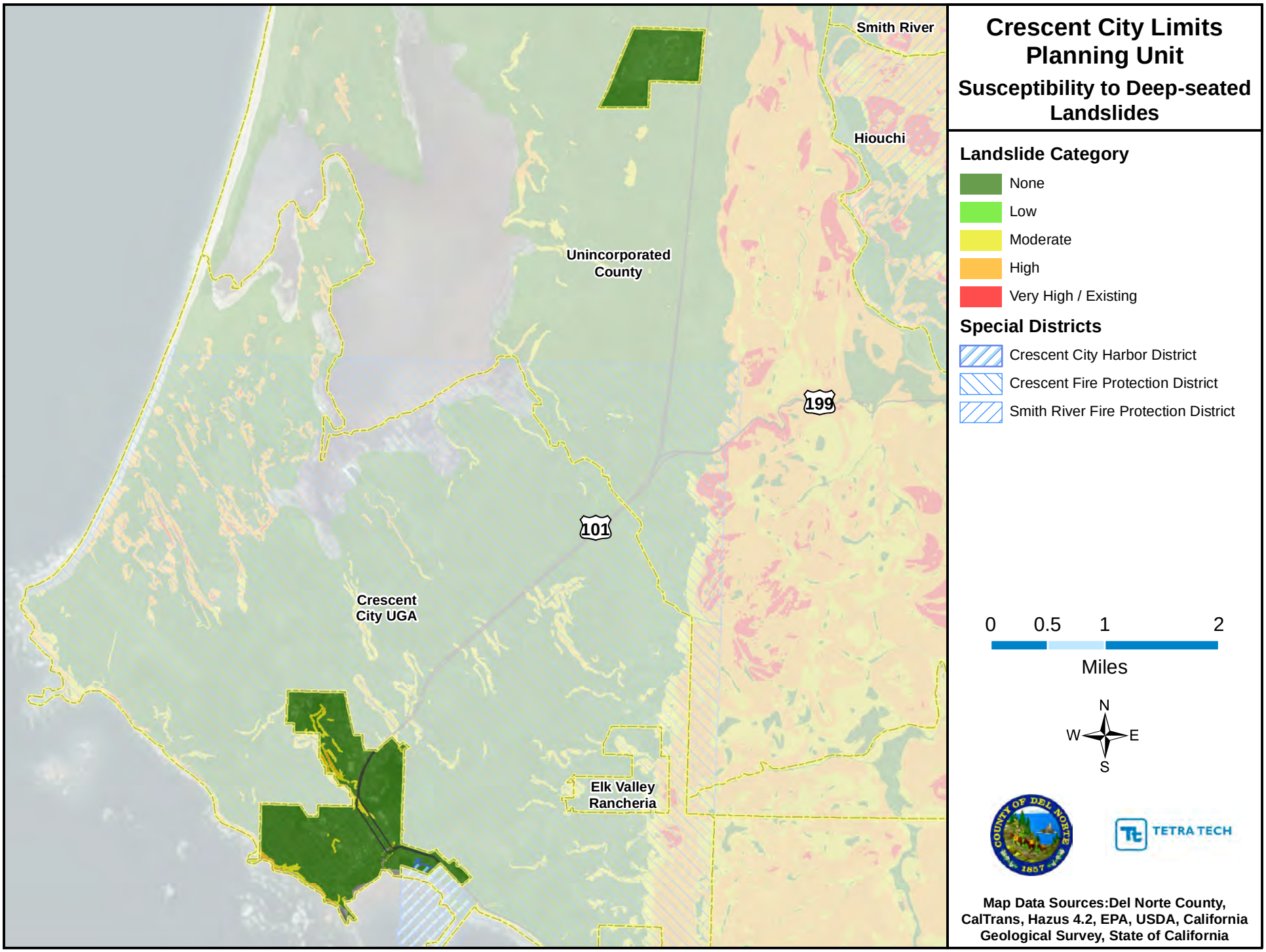
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California



Crescent City Limits Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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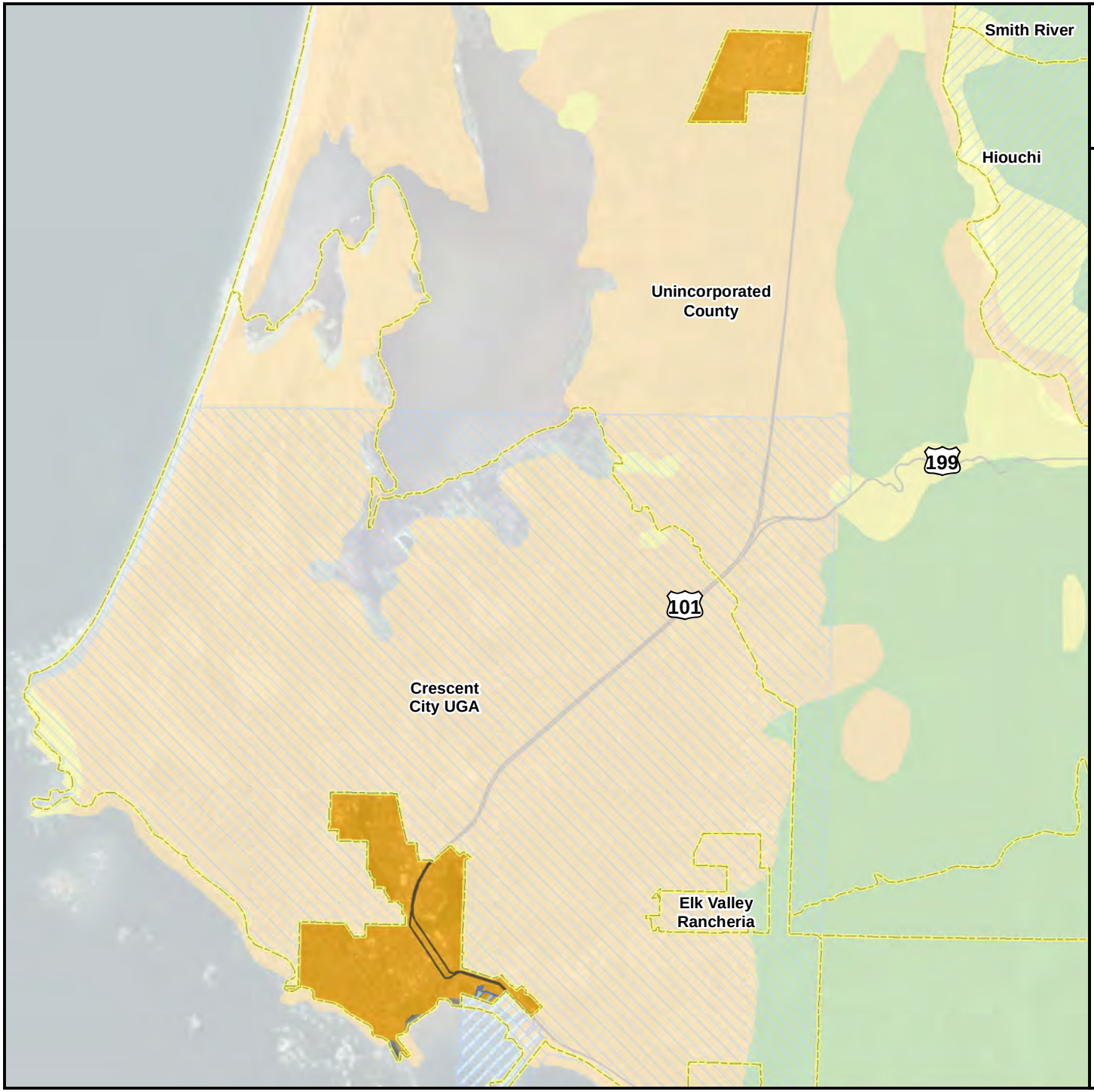
Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Crescent City Limits Planning Unit

NEHRP Soil Class

No Data

Soil Type

- B - Rock
- C - Hard Soil
- D - Soft Soil

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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Miles

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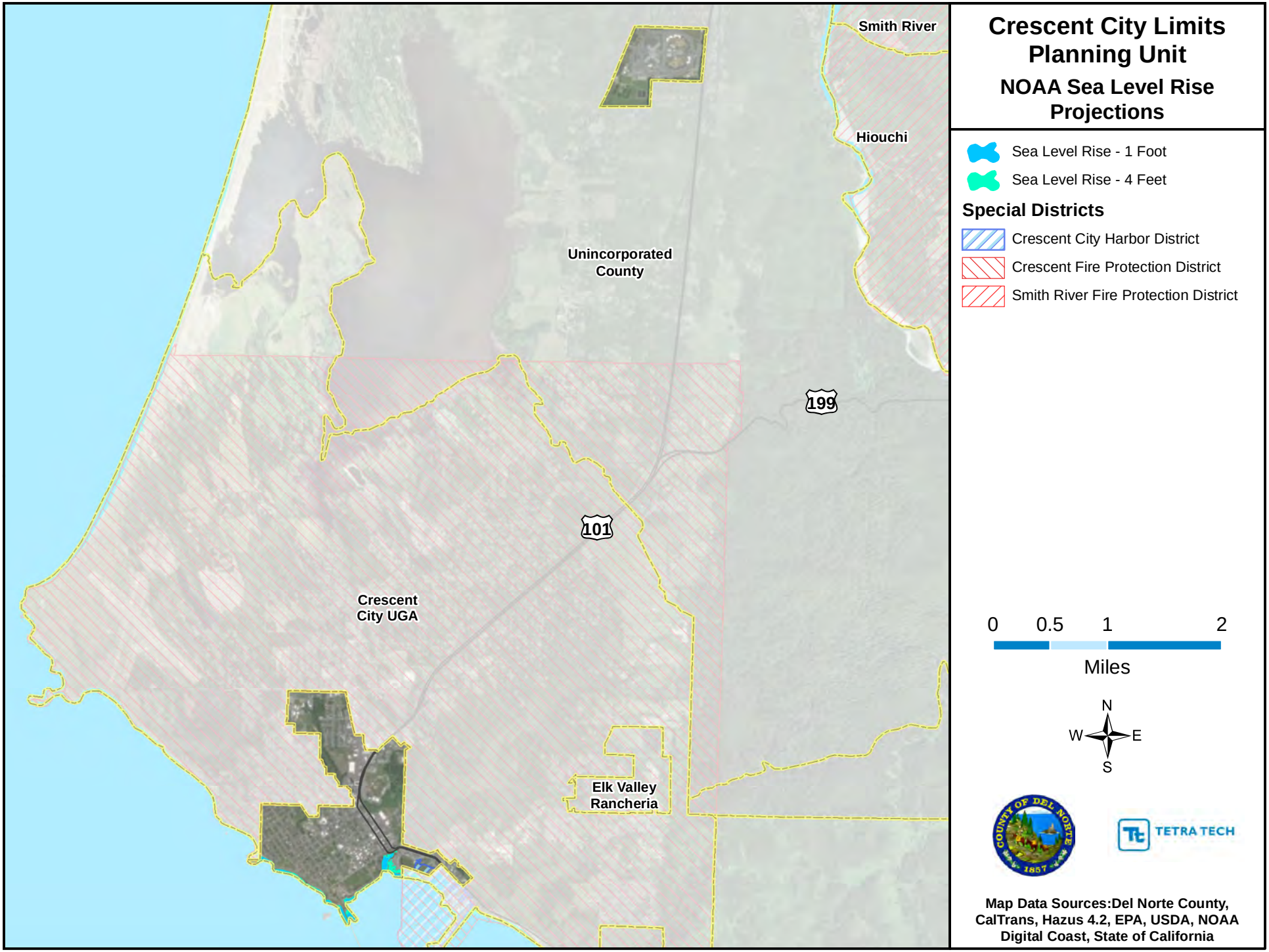
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Crescent City Limits Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Crescent City Harbor District

Crescent Fire Protection District

Smith River Fire Protection District

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Miles

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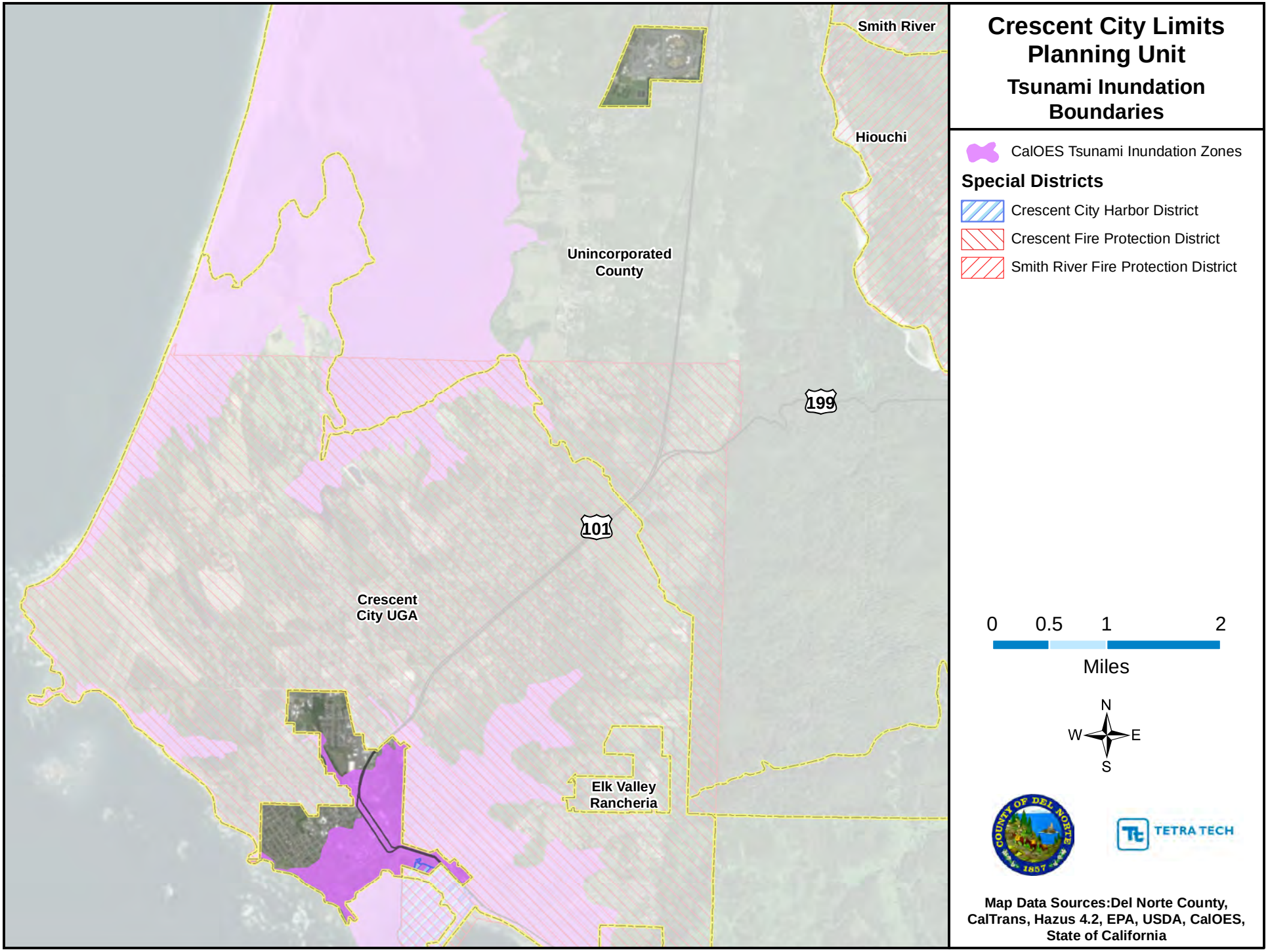
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California



Crescent City Limits Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

Crescent City Harbor District

Crescent Fire Protection District

Smith River Fire Protection District

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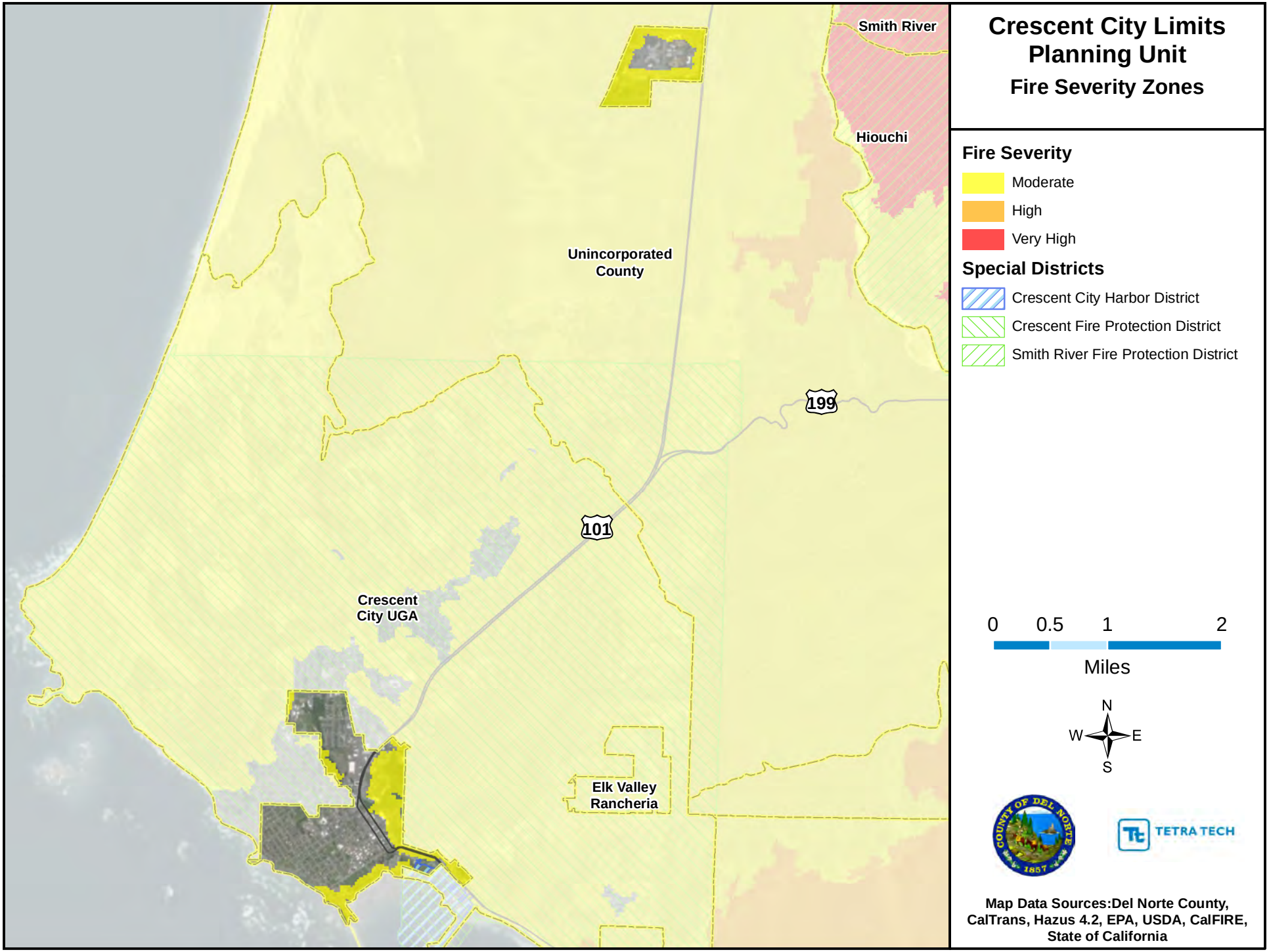
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Crescent City Limits Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Crescent City Harbor District
- Crescent Fire Protection District
- Smith River Fire Protection District

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TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California

3. ELK VALLEY RANCHERIA

3.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Heidi Valadao, Tribal Council Member
2332 Howland Hill Road
Crescent City, CA 95531
Telephone: 707-951-9193
e-mail Address: hvaladao@elk-valley.com

Alternate Point of Contact
Rob Jacob, Environmental Director
2332 Howland Hill Road
Crescent City, CA 95531
Telephone: 707-465-2661
e-mail Address: rjacob@elk-valley.com

3.2 TRIBE PROFILE

The following is a summary of key information about the Elk Valley Rancheria (EVR) tribe and its history:

- **Founding Date**—Time immemorial; Reservation created in 1909; illegally terminated in 1962, re-recognized in 1984; formally reorganized in 1994
- **Number of Current Tribal Members**—88
- **Current Tribal Planning Area Population**—99
- **Location and Description**—The Elk Valley Rancheria (reservation) consists of approximately 100 acres of land located wholly within Del Norte County, California. The Reservation is accessible from Howland Hill Road to the south, Norris Avenue to the north and is bisected by Mathews Street and Wyentae Street. The Reservation is comprised of 41 parcels located within the unincorporated portion of the city of Crescent City, Del Norte County. Of the 41 parcels that comprise the Reservation, twelve parcels are held in trust (approximately 40 acres). The remainder are fee lands owned by individuals (Tribal and non-Tribal) and by EVR.
- **Climate—**Elk Valley Rancheria lies in a Mediterranean Climate with mostly warm and dry summers. Precipitation approaches nearly 70 inches annually, with the wettest months being from November to March. Average temperatures are mild, the warmest month being August with an average high of 66 °F and an average low of 51 °F. The coolest, December averages a high of 53 °F and a low of 39 °F.
- **Brief History**—The Tolowa Indians of the Elk Valley Rancheria negotiated a treaty with the United States in 1852. The U.S. Senate never ratified this treaty or any of the 18 treaties negotiated with other tribes at the time, but treaties need not be consummated to evidence recognition (Department of the Interior, 2007). Pursuant to the 1906 Indian Office Appropriation Act of 1906, the United States purchased 100 acres for "homeless Indians of Del Norte County," formally establishing the original Reservation at its present location. Pursuant to this 1906 authorization the United States purchased what is now known as the Elk Valley Rancheria for the Elk Valley Tolowa. The United States held the property in trust for the benefit of the Tribe but legal title to the land remained with the United States. The initial Tribal members, consisting of displaced Indian people of both Tolowa and Yurok ancestry, organized a Tribal government pursuant to the Indian Reorganization Act of 1934. With the California Rancheria Act of 1958, Congress initiated a policy of terminating the Federal supervision of Indian tribes and established a process of terminating the Federal trust relationship with the Tribe thereby terminating their

status as individual Indians and as a Tribe. The Elk Valley Rancheria was terminated in 1962. In addition to revoking the Tribe's right to self-governance and other measures, the termination policy divided and transferred Reservation properties to individual members, requiring the payment of property taxes. As a result, Tribal members sold most of the property within the Reservation to non-Indians to avoid forced tax sales and few parcels remained in Tribal or even Indian ownership. In the 1970s, the Tribe joined other Indian community groups to legally challenge the 1958 California Rancheria Act and associated terminations of Tribal status (known as the "Tillie Hardwick" case). On March 2, 1987 the District Court ordered the Secretary of the Interior to publish notice that the United States maintained a government-to-government relationship with the Tribe re-establishing its Federal recognition status. In addition, the Court held that the Reservation had never been lawfully terminated, and the boundaries legally remained in existence. Accordingly, the Court established a process for the Secretary of the Interior to take trust title to any property still owned by any Indian on the Reservation; however, few parcels remained in Indian Ownership. The Tribe reorganized and, on December 27, 1994, formed a new government under a Constitution approved by the Secretary of the Interior.

- **Cultural Heritage**—The Elk Valley Rancheria Tribal membership is made up mostly of Tolowa and some Yurok Indians.
- **Tribal Governance and Tribal Departments**—The Tribe's governing body is the Elk Valley Tribal Council, a nine-member body consisting of a Chairperson, Vice-Chairperson, Secretary, Treasurer and five additional council members. The nine-member governing body is elected by the general Tribal membership for terms of four years. Tribal officials are elected at large with the most recent election having been held on January 2017. The Elk Valley Tribal Council assumes responsibility for the adoption of this plan; The Tribal Emergency Planning Committee will oversee its implementation. Other departments involved in the Plan implementation include Fiscal, Tribal Services, Maintenance, Grants and Environmental Services.
- **Health and Social Service Program—**As a service to Elk Valley Rancheria Tribal Members, the Tribe offers a Wellness Center that provides exercise classes, elder assistance, rides to doctor appointments, prescription pick up, meal deliveries, counseling for drug and alcohol, and coordination of local services.
- **Economy and Tourism**—The Elk Valley Rancheria Tribal Planning Area is strongly based in the tourism and social service industry. The Tribe is one of the largest employers within Del Norte County.

3.3 DEVELOPMENT TRENDS

The Elk Valley Rancheria is expanding its presence in the tourism and hospitality sectors. Part of this expansion includes the construction of a destination hotel/casino resort on the Tribe's Martin Ranch property. Phase I of this development will focus on the casino facility and is expected to break ground in 2018.

Table 3-1 summarizes anticipated development trends in expected future development trends.

Table 3-1. Recent and Expected Future Development Trends

Criterion	Response
Is the tribe expected to acquire any land areas during the performance period of this plan? • If yes, please describe land areas and dominant uses.	No N/A
Are any areas targeted for development in the next five years? • If yes, please briefly describe, including whether any of the areas are in known hazard risk areas	Yes The Tribe's Martin Ranch property is targeted for hotel/casino resort within the next five years. The westernmost 20% of the property lies within the projected tsunami inundation zone. However, the hotel and casino structures will be located on the upland portion of the property and out of the tsunami zone.
Please describe the level of buildout of tribal lands, based on the tribe's buildable lands inventory. If no such inventory exists, provide a qualitative description.	A 2014 Comprehensive Transportation and Master Plan identified areas of Elk Valley Rancheria property suitable for Tribal commercial, education, government, recreation and housing uses. Approximately 25% of the total Tribal land would be suitable for one or more of these uses.

3.4 ASSETS

The Elk Valley Rancheria owns 414.66 acres in trust status, valued at $3,365,780.08. The Tribe owns various parcels in fee status, also. Table 3-2 list the assets for Elk Valley Rancheria.

Table 3-2. Elk Valley Rancheria Assets

Asset	Year Built	Value
Critical Facilities		
Administration	2003	$2,916,800.19
Casino	1996	$11,303,007.15
Gathering Place-Head Start, UIHS, Small Ctr	1995, 1996	$567,342.31
Grants, Enviro, Wellness Offices	1993,1998	$187,556.00
Residential-460 & 275 Mathews, 2295-2297 Norris	1994	$455,497.56
Storage – 430 Wyentae		$17,662.50
Two generators	N/A	Admin Building and Casino have generators
Total		$15,447,865,71
Tribe Cultural Assets		
Museum Collection		$80,000.00
Total		$15,527,865.71

3.5 CAPABILITY ASSESSMENT

The Tribe performed an inventory and analysis of existing capabilities, plans, programs and policies that enhance its ability to implement mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities is presented in Table 3-3.
- An assessment of administrative and technical capabilities is presented in Table 3-4.
- An assessment of education and outreach capabilities is presented in Table 3-5.
- Classifications under various community mitigation programs are presented in Table 3-6.
- The Tribe's adaptive capacity for the impacts of climate change is presented in Table 3-7.

Table 3-3. Tribe Legal and Regulatory Capability

	Tribal Authority or Program in Place	Other Jurisdiction Authority	Effect on Loss Reduction	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	Yes	Facilitate	No
Comment: *Elk Valley Rancheria has adopted building codes from the State of California. Fee land within the Reservation but not owned by EVR are subject to county building codes.*				
Zoning Code	Yes	Yes	Facilitate	No
Comment: *Elk Valley Rancheria, California Ordinance No, 01-08 – Zoning and Land Use Regulations for the Elk Valley Rancheria. Fee land within the Reservation but not owned by EVR is subject to county building codes.*				
Subdivisions	Yes	Yes	Facilitate	No
Comment: *Elk Valley Rancheria, California Ordinance No, 01-08 – Zoning and Land Use Regulations for the Elk Valley Rancheria Fee land within the Reservation but not owned by EVR is subject to county building codes.*				
Stormwater Management	Yes	No	Support	Yes
Comment: *NPS Management Plan-2016*				
Post-Disaster Recovery	No	No	N/A	Yes
Comment: *None provided*				
Real Estate Disclosure	No	No	N/A	No
Comment: *None provided*				
Growth Management	No	No	N/A	No
Comment: *None provided*				
Site Plan Review	No	No	N/A	No
Comment: *None provided*				
Environmental Protection	Yes	No	Support	Yes
Comment: *Off-Reservation Environmental Review Ordinance; Resolution 2010-03: Prohibiting the discharge of pollutants in/on Tribal waters/Trust Lands*				
Flood Damage Prevention	No	No	N/A	Yes
Comment: *None provided*				
Emergency Management	Yes	No	Support	Yes
Comment: *Emergency Planner on Staff. FEMA Community Emergency Response Team Certified. Elk Valley is currently developing a Comprehensive Emergency Management Plan, ETA September 2018.*				
Climate Change Adaptation	No	No	N/A	Yes
Comment: *None provided*				
Planning Documents				
General Plan	Yes	No	Facilitate	Yes
Comment: *2014 Comprehensive Transportation and Master Plan*				
Capital Improvement Plan	Yes	No	Facilitate	No
How often is the plan updated? Every 5-years *Comment:* The CIP addresses the existing casino plus the future casino/resort planned for the Tribe's Martin Ranch property. Access roads, water and wastewater infrastructure are also addressed. Warehousing and a possible retail operation are slated to be listed in the CIP update.				
Floodplain or Watershed Plan	No	No	N/A	Yes
Comment: *None provided*				
Stormwater Plan	Yes	No	Support	Yes
Comment: NPS Management Plan - 2016				
Habitat Conservation Plan	No	No	N/A	No
Comment: *None provided*				

	Tribal Authority or Program in Place	Other Jurisdiction Authority	Effect on Loss Reduction	Integration Opportunity?
Economic Self-Sufficiency Plan	Yes	No	Facilitate	No
Comment: Revenue Allocation Plan, adopted October 15, 2003. Plan is not scheduled for periodic update				
Shoreline Management Plan	No	No	N/A	No
Comment: None provided				
Community Wildfire Protection Plan	No	No	N/A	Yes
Comment: None provided				
Forest Management Plan	Yes	No	Support	Yes
Comment: 2008-2023 EVR FMP				
Climate Action Plan	No	No	N/A	Yes
Comment: None provided				
Comprehensive Emergency Management Plan	No	No	N/A	Yes
Comment: None provided				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	No	N/A	Yes
Comment: None provided				
Post-Disaster Recovery Plan	No	No	N/A	Yes
Comment: None provided				
Continuity of Operations Plan	No	No	N/A	Yes
Comment: None provided				
Public Health Plan	No	No	N/A	No
Comment: None provided				

Table 3-4. Tribe Administrative and Technical Capability

Tribe Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	No	
Engineers or professionals trained in building or infrastructure construction practices	No	
Planners or engineers with an understanding of natural hazards	No	
Staff with training in benefit/cost analysis	Yes	Accounting; Legal
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	Environmental Department
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Grants Department
Grant writers	Yes	Grants Department

Table 3-5. Tribe Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	Yes The Nonpoint Source Management Plan is available on the website.
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	No N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly describe.	Yes Emergency Planning Committee
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes Quarterly Tribal Member Newsletter
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	No N/A

Table 3-6. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 3-7. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Tribe-level understanding of potential climate change impacts	Medium
Comment: None provided	
Tribe-level monitoring of climate change impacts	Low
Comment: None provided	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment: None provided	
Tribe-level capacity for development of greenhouse gas emissions inventory	Low
Comment: None provided	
Capital planning and land use decisions informed by potential climate impacts	Unsure
Comment: None provided	
Participation in regional groups addressing climate risks	Medium
Comment: None provided	

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Unsure
Comment: None provided	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: None provided	
Identified strategies for adaptation to impacts	Low
Comment: None provided	
Champions for climate action in tribal government	Unsure
Comment: None provided	
Tribal government support for implementing climate change adaptation strategies	Unsure
Comment: None provided	
Financial resources devoted to climate change adaptation	Unsure
Comment: None provided	
Tribe authority over sectors likely to be negative impacted	High
Comment: None provided	
Public Capacity	
Tribe members' knowledge of and understanding of climate risk	Unsure
Comment: None provided	
Tribe members' support of adaptation efforts	Unsure
Comment: None provided	
Tribe members' capacity to adapt to climate impacts	Unsure
Comment: None provided	
Tribe members' current capacity to adapt to climate impacts	Unsure
Comment: None provided	
Local ecosystems' capacity to adapt to climate impacts	Medium
Comment: None provided	

a. High = Capacity exists and is in use; Medium = Capacity may exist but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

3.6 NATIONAL FLOOD INSURANCE PROGRAM PARTICIPATION

The Elk Valley Rancheria does not currently participate in the National Flood Insurance Program.

3.7 FUNDING SOURCES

The Elk Valley Rancheria is aware of funding sources to support the implementation of mitigation actions and projects. The Tribe has used tribal, private, and non-FEMA federal funds for hazard mitigation projects including the following:

- **2008-2023 Forest Management Plan**—Bureau of Indian Affairs funding was used to develop this Plan which includes the implementation of defensible space to protect residential and Tribal infrastructure in the event of a wildfire.
- **2016 Nonpoint Source Management Plan**—Environmental Protection Agency funding was used to develop this Plan that, in part, addresses stormwater runoff on the Reservation.

FEMA mitigation funding, including HMGP, PDM, PA (C-G) and FMAG, have also been used to support hazard mitigation objectives, including the following:

- **Community Emergency Response Team Training**—Cal OES Homeland Security funding, as part of a FEMA grant, was and is being used to train Tribal critical personnel in emergency response.

Table 3-8 identifies potential sources of funding to implement mitigation actions in the future.

Table 3-8. Tribe Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Income Generating Businesses	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Bureau of Indian Affairs Sponsored Grant Programs	Yes
Indian Health Services Grant Programs	Yes
U.S. Dept. of Agriculture, Rural Development Agency Grant Programs	Yes
U.S. Environmental Protection Agency Grant Programs	Yes
U.S. Fire Administration Grant Programs	No
Tribal Homeland Security Grants	Yes
U.S. Army Corps of Engineers	Yes
FEMA Stafford Act Grant Programs	Yes
Healthy Forest Restoration Action	No
Office of Self Governance Programs	Yes

3.8 GRANT ADMINISTRATION

Grant funding received by the Tribe is administered by the Director of Grants. Grant implementation and project closeout procedures are as follows:

The Tribe utilizes accounting systems that meet the minimum standards required by 2 CFR Part 200 which include:

- Disclosure of accurate, current and complete financial results of federally assisted activities;
- Maintenance of effective internal controls and accountability for all assets including accounting controls and management activities;
- Preparation of a separate budget for each federally assisted program based on prescribed categories, and assurance that expenditures do not exceed the approved budgets;
- Assurances that funds are expended in accordance with program requirements set forth in grant agreements and the Super Circular;

- Maintenance of source documents in both electronic and paper form and financial management procedures that provide an effective system of internal controls to safeguard cash and other assets;
- The provision of timely, accurate and complete financial information for management to make informed decisions and review accuracy of financial information;
- The provision of financial data needed to prepare the financial statements and various federal reports and permit a timely and effective audit.

These policies ensure that financial information is presented and reported in accordance with GAAP. The Tribal financial management policies and procedures follow provisions in the Super Circular that outline requirements for recordkeeping, financial reporting, and audits.

During a grant project, and at least monthly, the Director of Grants will present a current status of this project to Tribal Council and the Chief Operations Officer (COO), which includes presenting the status of the implementation schedule with explanations of any deviations, status of budget to actual revenue and expenditures, and upcoming phases needed to complete the project. Quarterly reports will consist of the required Federal Financial Report, Form 425, prepared by CFO, and project narratives as prepared by the Director of Grants. All financial reports and project narratives will be reviewed and approved by COO/Chairman. The Director of Grants will prepare and submit the final closeout reports.

3.9 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into tribal planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

As this hazard mitigation plan is implemented, Elk Valley Rancheria will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and Tribe action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Stormwater Management—**The Elk Valley Rancheria Nonpoint Source Management Plan could be revised to include hazard mitigation as a result of severe storm events.
- **Post-Disaster Recovery**—The Tribe could develop planning and ordinances related to public engagement, resilience planning, housing and economic recovery in the face and wake of natural disasters.
- **Environmental Protection**—The Tribe could prioritize mitigation to the natural environment while planning for recovery from natural disasters.
- **Flood Damage Prevention**—Because flooding is a result of severe storm activity in our region, the Tribe could take planning measures to prevent flood damage to the reservation. See “Floodplain Plan” below.
- **Emergency Management—**Elk Valley Rancheria has already identified and implemented training of key personnel within the organization (e.g., Community Emergency Response Team training). MOUs or other agreements could be established with other planning area emergency management teams to share resources and expertise.

- **Climate Change Adaptation—**By adapting to climate change, the Tribe could plan and anticipate increasing threats from severe storm weather, wildfires, landslides and other disasters that are prone to our area.
- **General Plan—**The 2014 Comprehensive Transportation & Master Plan could be amended to include planning for natural disaster mitigation and recovery.
- **Floodplain Plan—**The Tribe could adopt ordinances and planning limiting or controlling development in low-lying areas of the Reservation that are potential or historical flood risks.
- **Community Wildfire Protection Plan—**The Tribe could amend the existing Forest Management Plan to involve the tribal community and others living on the Reservation that would address wildfire mitigation (e.g., Defensible Space).
- **Forest Management Plan—**The existing 2008-2023 Forest Management Plan contains language addressing reducing fuel loads, defensible space, prescribed burning, etc., that could translate into other planning documents or ordinances (e.g., Climate Adaptation).
- **Climate Action Plan—**See "Climate Change Adaptation" above.
- **Comprehensive Emergency Management Plan—**See "Emergency Management" above.
- **Threat and Hazard Identification and Risk Plan—**The Tribe could develop a Threat and Hazard Identification and Risk Plan as a standalone document or include it as a section of the 2014 Master Plan.
- **Continuity of Operations Plan—**The Tribe could develop planning that would ensure essential services and critical facilities maintain operations after a natural disaster**.**

3.10 NATURAL HAZARD EVENT HISTORY

Table 3-9 lists past occurrences of natural hazards for which specific damage was recorded in Elk Valley Rancheria. Other hazard events that broadly affected the entire planning area, including Elk Valley Rancheria, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 3-9. Past Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Flooding	1203	02/21/1998	Minimal
Flooding	N/A	12/02/1998	Minimal
Severe Storm	1628	12/17/2005	Minimal

3.11 FUNDING SOURCES

The Elk Valley Rancheria Tribal Government is aware of funding sources to support the implementation of mitigation actions and projects. The tribe has not used tribal, private, and non-FEMA federal funds for hazard mitigation projects. Additionally, Elk Valley Rancheria has not used FEMA mitigation funding.

3.12 HAZARD RISK RANKING

Table 3-10 presents a local ranking for Elk Valley Rancheria of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 3-10. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Severe weather[b]	(3 x 9) = 27	High
2	Earthquake[a]	(2 x 9) = 18	Medium
3	Drought[f]	(3 x 4) = 12	Low
4	Wildland fire[c]	(3 x 3) = 9	Low
5	Dam failure[g]	(1 x 0) = 0	None
5	Flooding[d]	(2 x 0) = 0	None
5	Landslide[e]	(3 x 0) = 0	None
5	Sea level rise[h]	(2 x 0) = 0	None
5	Tsunami[i]	(3 x 0) = 0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on property and low impact on economy.
c. Based on Very High and High Fire Severity Zones. No people or property is located in fire severity zones; however, risk rating was adjusted to account for potential impacts from smoke.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, low impact on property and medium impact on economy.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

3.13 TRIBE-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the tribe.

3.13.1 Repetitive Loss Properties

Elk Valley Rancheria does not currently have any repetitive loss properties or severe repetitive loss properties as defined by the National Flood Insurance Program as the Tribe is not currently a program participant.

3.13.2 Other Noted Vulnerabilities

The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Earthquake
  - All of the Tribe's critical facilities are located on class D soils, which may be prone to liquefaction
  - Based on the Del Norte County Loss Matrix, Elk Valley Rancheria has a building structure and contents value of $90,720,737.00. using the FEMA HAZUS modelling software, a Cascadia zone 9.0 earthquake could potentially produce 16.8%, or over $15 Million in structural and contents damage to Elk Valley Rancheria property.
- Severe weather
  - Power disruption can occur because of severe weather events.

  - Nearly 70% of Elk Valley Rancheria Tribal Members consider themselves only "Somewhat Prepared" to get along without electricity for up to 10 days.
  - Local culverts are overwhelmed during high rain events causing localized flooding to roadways and infrastructure.

- Wildland Fire

  - Although the Tribe is not located in a high fire risk zone, Tribal members and staff have been impacted by regional wildfire smoke.

- All Hazards

  - Tribal Elders constitute nearly 40% of Tribal membership. Tribal Elders will require special considerations and care during a natural disaster.

3.14 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 3-11 lists the actions that make up the Tribe's hazard mitigation action plan. Table 3-12 identifies the priority for each action. Table 3-13 summarizes the mitigation actions by hazard of concern and mitigation type.

3.15 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

3.15.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulations were reviewed to provide information for this annex.

- **Elk Valley Rancheria, California Ordinance No, 01-08 – Zoning and Land Use Regulations for the Elk Valley Rancheria—**This Ordinance was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Elk Valley Rancheria, California Comprehensive Master and Transportation Plan**—This plan was reviewed to determine future growth and development in order to identify preventative planning actions that will address hazards as outlined in the Hazard Mitigation Plan.
- **Elk Valley Rancheria, California Integrated Resource Management Plan** (Includes Elk Valley Rancheria Forest Management Plan)—This plan was reviewed to ensure that future mitigation actions take existing resource management efforts into consideration.
- **Elk Valley Rancheria, California Health Needs Assessment 2015—**This plan was used to identify current unmet needs that will play a role during an emergency event.
- **Elk Valley Rancheria, California Non-Point Source Management Plan—**This plan was used to identify storm water runoff areas and faulty culverts that contributed to flooding during storm events.
- **2016 Nonpoint Source Management Plan—**Used as reference for Stormwater Management.
- **Tribal Resolution 2010-03**—Used as a reference for Environmental Protection
- **2014 Comprehensive Transportation & Master Plan**—Used as a potential source document, if amended, to include a Threat and Hazard Identification and Risk Plan and other disaster mitigation/recovery strategies.
- **2008-2023 Forest Management Plan**—Used as a source for Community Wildfire Protection and a potential source document, if amended, to include Climate Action and Adaptation.
- **Technical Reports and Information—**The following **o**utside resources and references were reviewed:

  - **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to develop this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

Table 3-11. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EVR-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that are located in high or medium ranked hazard areas.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire						
Existing	3, 48	Elk Valley Rancheria	Department of Grants	High	HMGP, PDM, FMA	Short-term
EVR-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the Comprehensive Emergency Management Plan, Integrated Resource Management Plan and the Comprehensive Master and Transportation Plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, tsunami, wildland fire						
New and Existing	1, 3, 4, 5, 7, 8	Elk Valley Rancheria	Department of Grants	Low	Staff Time, General Funds, Possible Grants	Ongoing
EVR-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 5, 8	Elk Valley Rancheria	Tribal Emergency Management	Low	Staff Time, General Funds	Short-term
EVR-4—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including the Grants Building and the Head Start Building.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 6, 9	Elk Valley Rancheria	Department of Grants	Medium	BIA, HMGP, EMPG	Short Term
EVR-5—Inventory and assess all culverts on Tribal lands. Through targeted mitigation, replace those likely to fail during a storm event.						
Hazards Mitigated: Severe Weather, Flooding						
New and Existing	3,4	Elk Valley Rancheria	Transportation Department	Medium	FHWA, HMGP, NRCS	Short Term
EVR-6—Develop and implement fuels reduction projects to reduce wildfire hazard on Tribal lands.						
Hazards Mitigated: Wildland Fire						
New and Existing	3,4	Elk Valley Rancheria	Environmental Services	Medium	BIA, NRCS	Ongoing
EVR–7—Develop a Continuity of Operations Plan and Continuity of Government Plan to sustain reliable operations and facilities during and after a disaster.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New	2,4,6,9	Elk Valley Rancheria	Tribal Emergency Management	Low	EMPG, HMGP, Staff Time	Short Term
EVR–8—Increase Tribal member knowledge of natural disaster and preparedness through the use of educational tools such as social media, articles and links to information on the Tribal website and newsletter, and through providing preparedness trainings and events.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New	4,5,9	Elk Valley Rancheria	Tribal Services	Low	Tribal Funds, EPA, BIA, HSGP	Ongoing
EVR-9—Develop programs that specifically assist Tribal Elders and vulnerable populations in the event of a natural disaster such as stockpiling N95 masks, purchasing an ADA capable van for evacuation, etc.						
Hazards Mitigated: Wildland Fire						
New	4,5,9	Elk Valley Rancheria	Tribal Services	Low	Tribal Funds, IHS	Short Term
EVR–10—Develop a Post Disaster Recovery and Debris Management Plan.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New	2,4,6,9	Elk Valley Rancheria	Tribal Emergency Management	Low	Tribal Funds, EMPG, HMGP	Short Term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EVR-11—Identify and pursue strategies to increase adaptive capacity to climate resiliency including the development of a vulnerability and adaptation plan.						
Hazards Mitigated: Drought, flooding, landslide, severe weather, wildland fire						
New	1,3,4,5,6,7,8	Elk Valley Rancheria	Environmental Services	Low	EPA	Short Term

Table 3-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EVR-1	3	High	High	Yes	Yes	No	Medium	High
EVR-2	6	Medium	Medium	Yes	No	No	Medium	High
EVR-3	3	Low	Low	Yes	No	Yes	High	Low
EVR-4	3	Medium	High	Yes	Yes	No	Medium	High
EVR-5	2	Medium	Low	Yes	Yes	Yes	High	Low
EVR-6	2	Medium	Medium	Yes	Yes	No	Medium	High
EVR-7	4	Low	Low	Yes	Yes	Yes	High	Low
EVR-8	3	Medium	Low	Yes	No	Yes	High	Low
EVR-9	3	Medium	Low	Yes	Yes	Yes	High	Low
EVR-10	4	Medium	Medium	Yes	Yes	No	Medium	High
EVR-11	7	Low	Low	Yes	Yes	No	Medium	Medium

a. See the introduction to this volume for explanation of priorities.

Table 3-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Earthquake	2, 3, 7	1	8		4, 9,10		11	8, 10, 11
Severe weather	2, 3, 7	1	8		4, 9,10	5	11	8, 10, 11
Drought	2, 3, 7	1	8	6			6, 11	8, 10, 11
Dam failure	2, 3, 7	1	8		4, 9,10		11	8, 10, 11
Flooding	2, 3, 7	1	8		4, 9,10	5	11	8, 10, 11
Landslide	2, 3, 7	1	8		4, 9, 10		11	8, 10, 11
Tsunami	2, 3, 7	1	8		4, 9, 10	5	11	8, 10, 11
Wildland fire	2, 3, 7	1	8	6	4, 9,10		6, 11	8, 10, 11

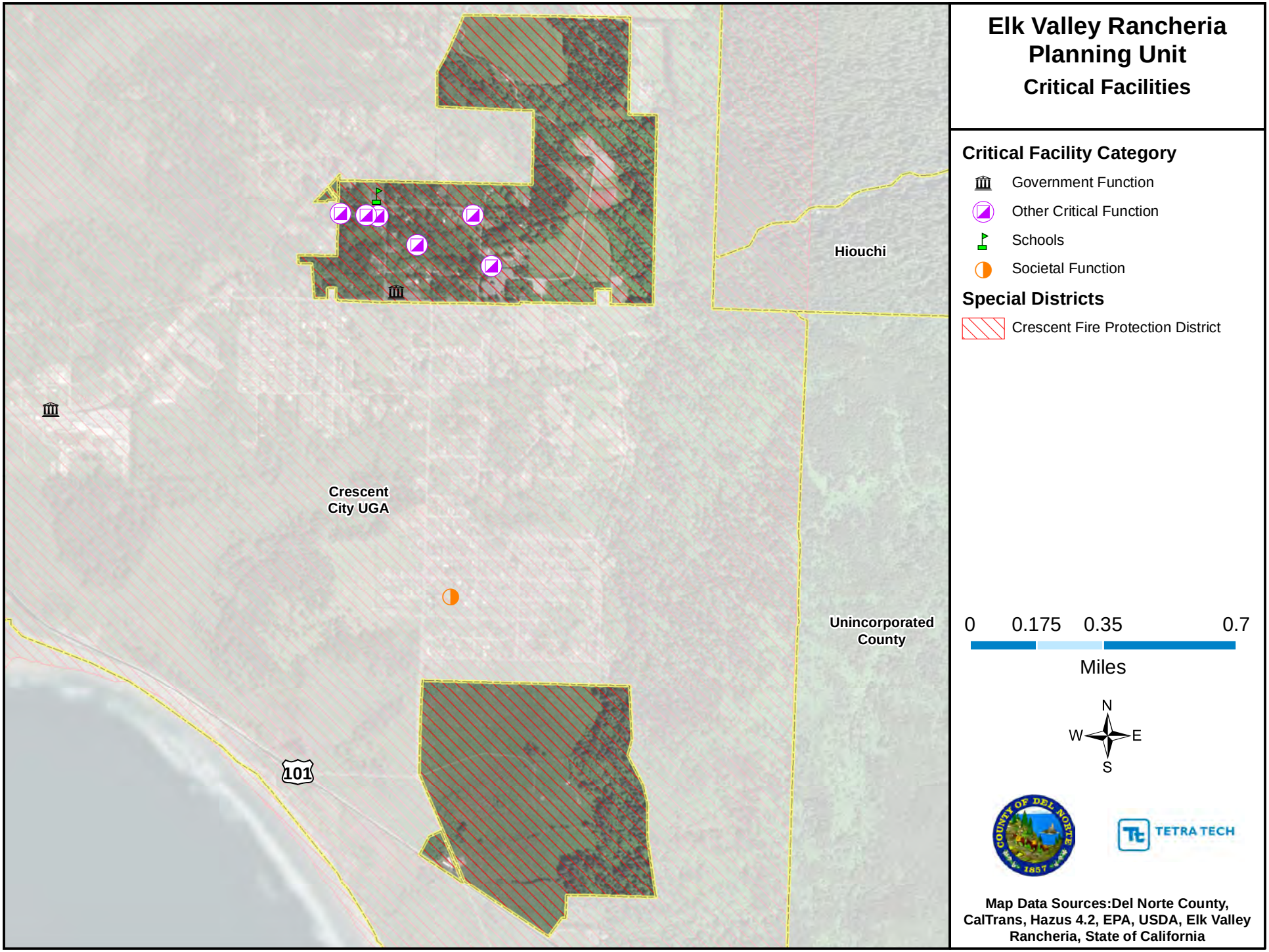
a. See the introduction to this volume for explanation of mitigation types.

3.15.2 Process for Annex Development

This annex was developed during the Plan update process with input from Tribal Council, Department Mangers, including but not limited to, the Fiscal Department, Grants Department, Transportation Department, Tribal Services, Maintenance Department and Culture Department. The Plan was also discussed in the Tribal Emergency Response Committee which meets on a quarterly basis. A survey was submitted to all Tribal members regarding local natural disasters and these comments and conclusions were incorporated into appropriate mitigation actions. Plan drafts were submitted to the Tribal Legal Counsel for review and comment. Finally, this plan was reviewed and approved by Tribal Council.

3.16 ASSURANCES

The Elk Valley Tribal Council will comply with all applicable federal statutes and regulations in effect with respect to the periods for which it receives grant funding, including 2 CFR Parts 200 and 3002, and will amend its plan whenever necessary to reflect changes in tribal or federal laws and statutes.



Elk Valley Rancheria Planning Unit

Critical Facilities

Critical Facility Category

- Government Function
- Other Critical Function
- Schools
- Societal Function

Special Districts

- Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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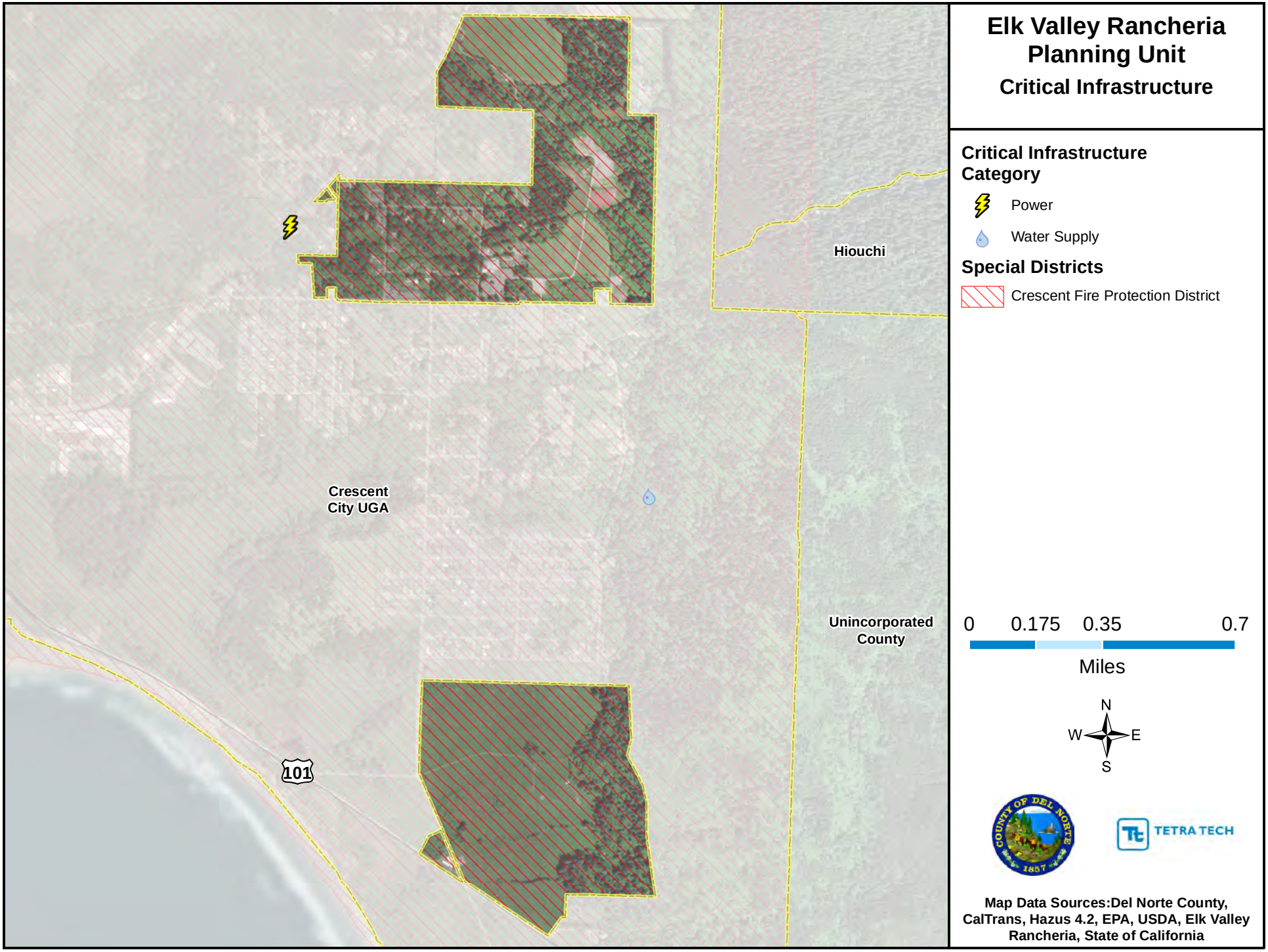
S

TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Elk Valley Rancheria Planning Unit

Critical Infrastructure

Critical Infrastructure Category

- Power
- Water Supply

Special Districts

- Crescent Fire Protection District

0 0.175 0.35 0.7

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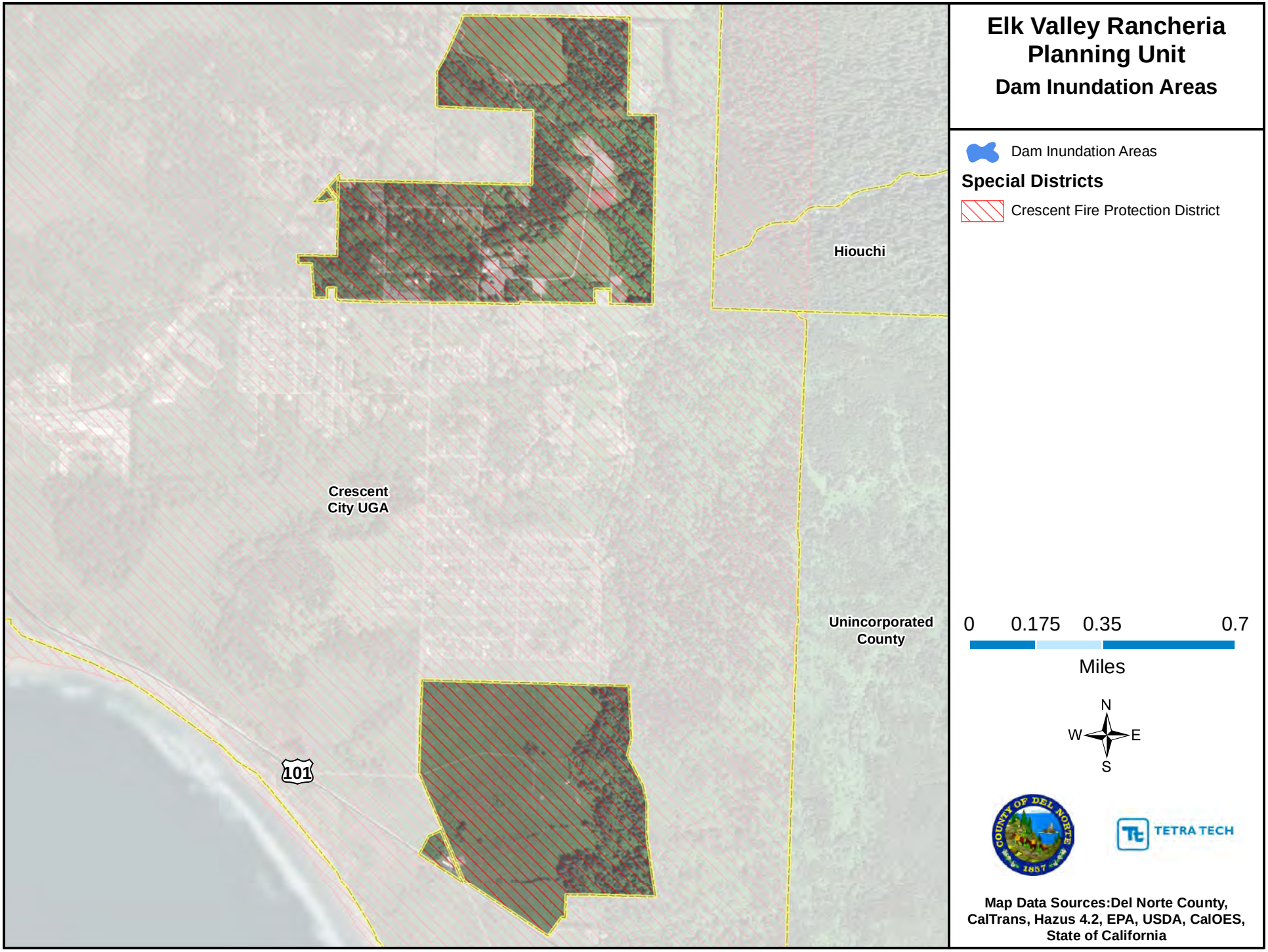
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, Elk Valley Rancheria, State of California



Elk Valley Rancheria Planning Unit

Dam Inundation Areas

Dam Inundation Areas

Special Districts

Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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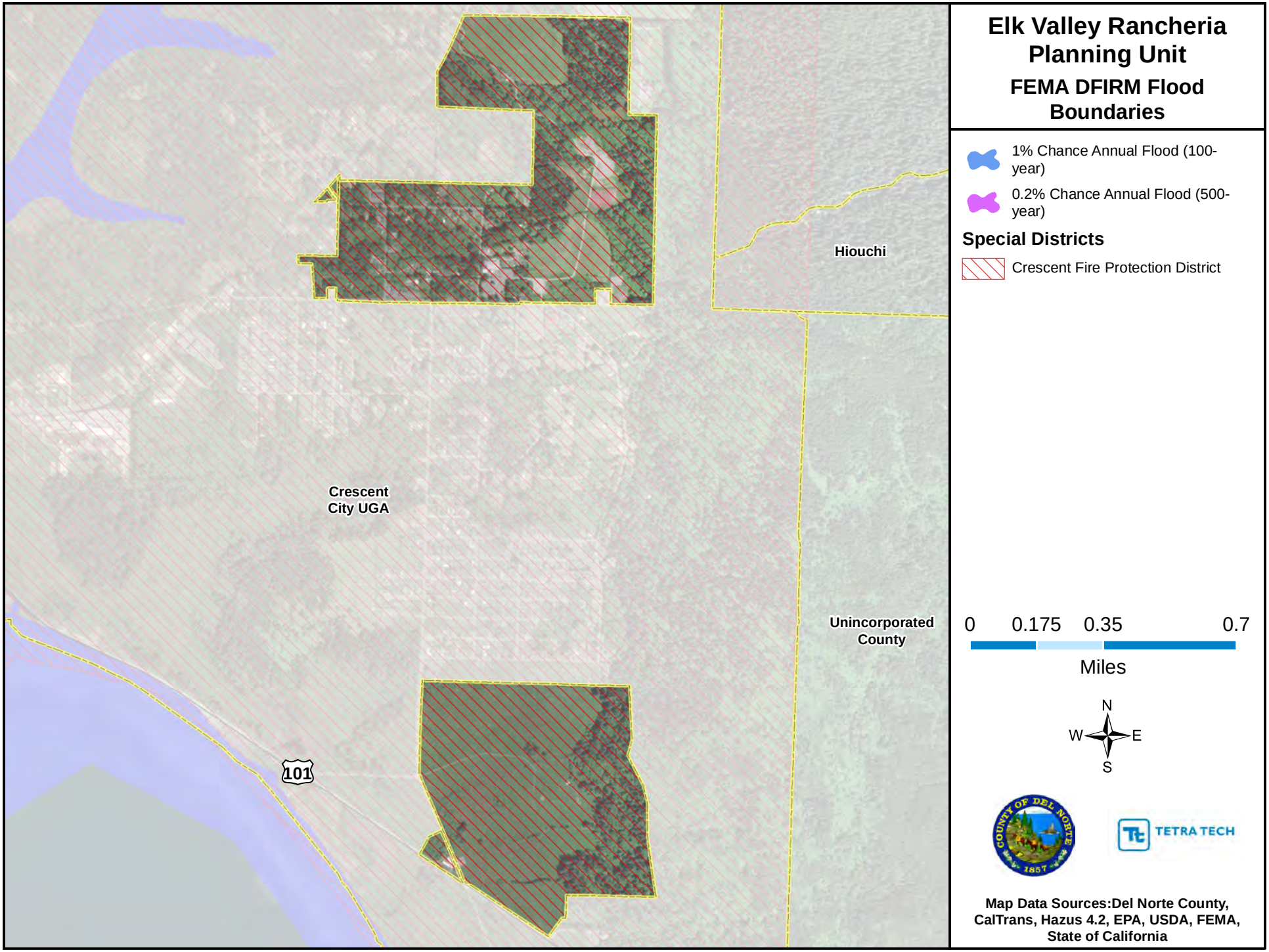
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Elk Valley Rancheria Planning Unit

FEMA DFIRM Flood Boundaries

1% Chance Annual Flood (100-year)

0.2% Chance Annual Flood (500-year)

Special Districts

Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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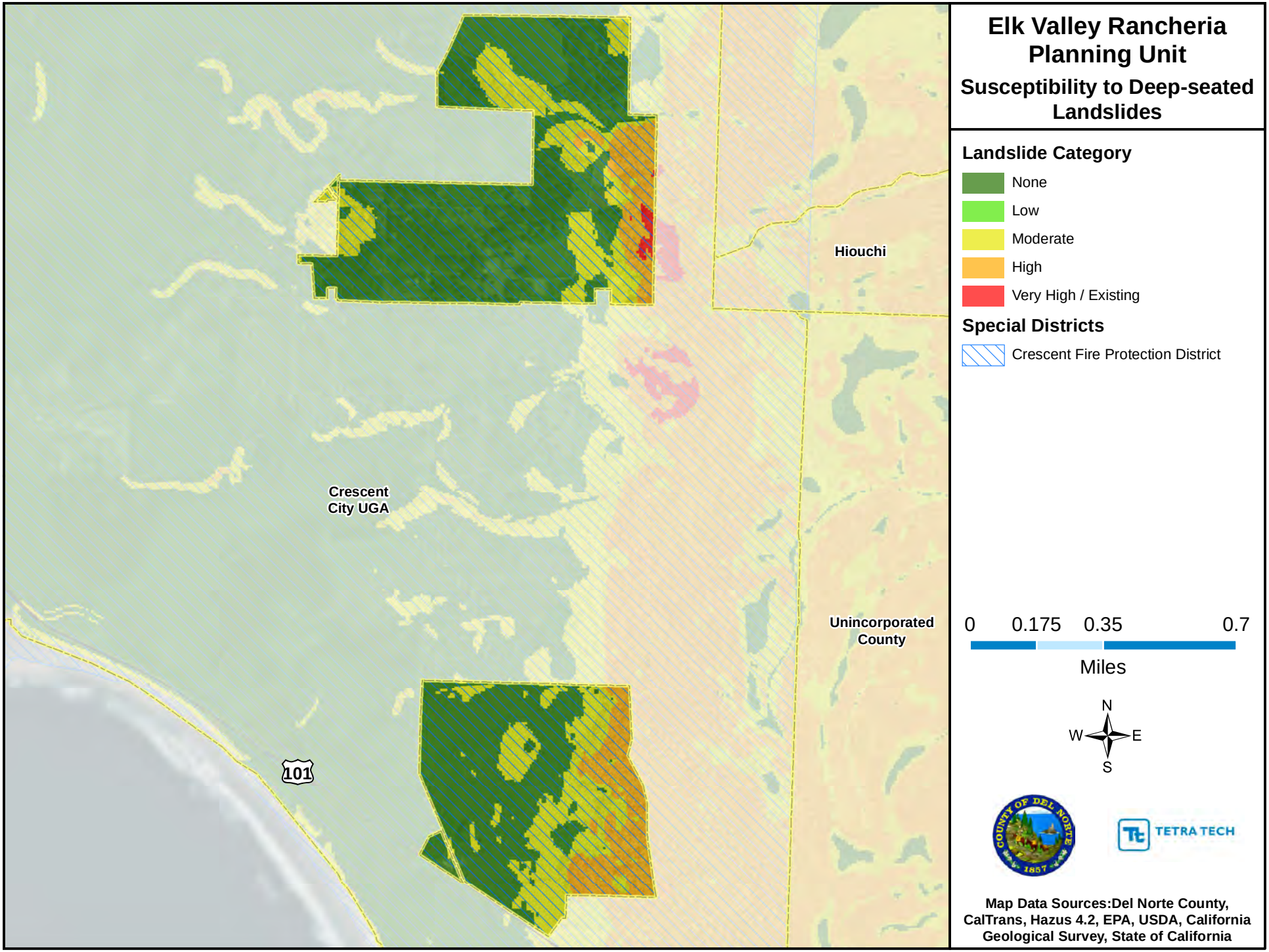
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, FEMA, State of California



Elk Valley Rancheria Planning Unit

Susceptibility to Deep-seated Landslides

Landslide Category

- None
- Low
- Moderate
- High
- Very High / Existing

Special Districts

- Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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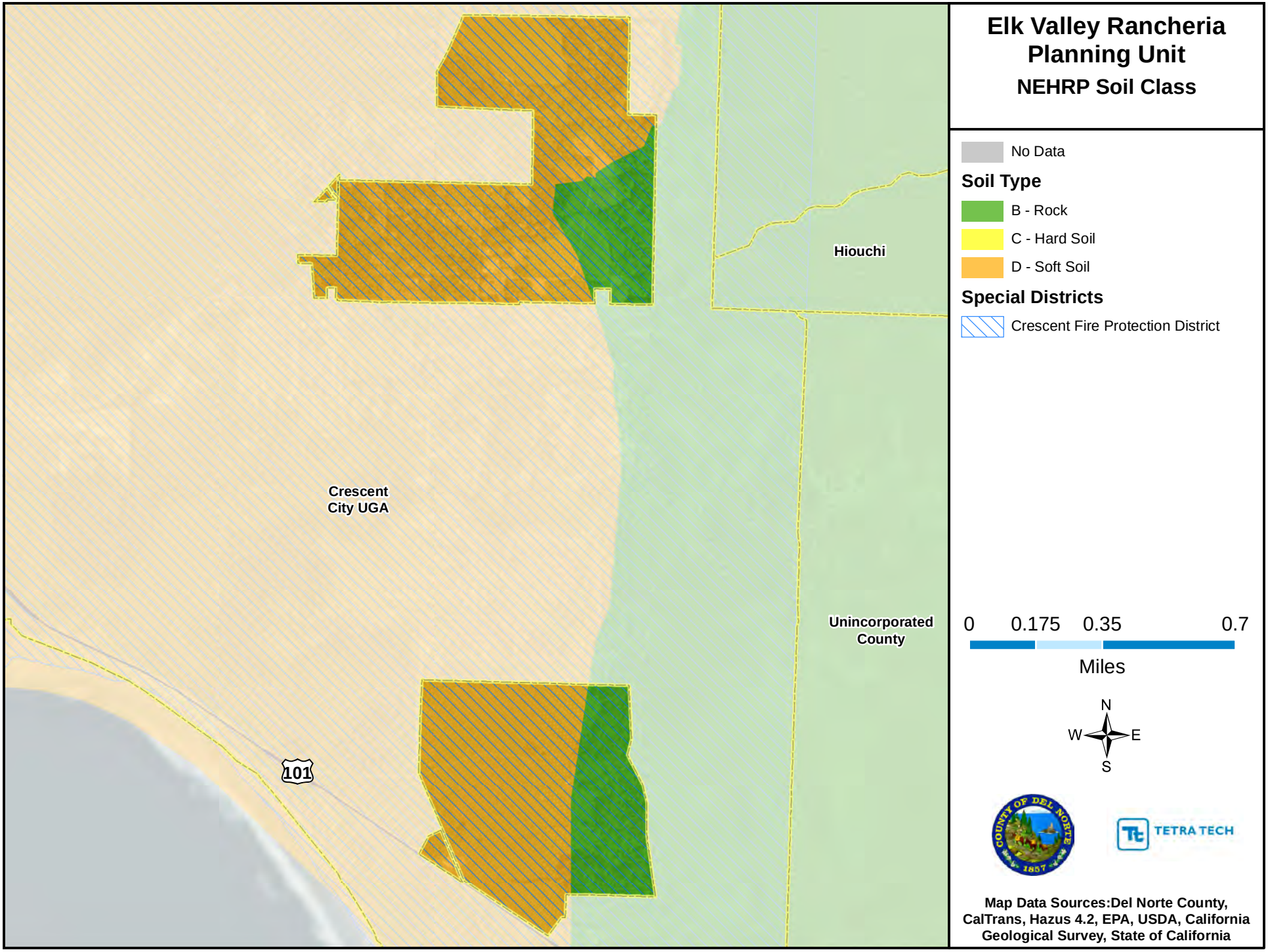
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Elk Valley Rancheria Planning Unit

NEHRP Soil Class

No Data

Soil Type

- B - Rock
- C - Hard Soil
- D - Soft Soil

Special Districts

- Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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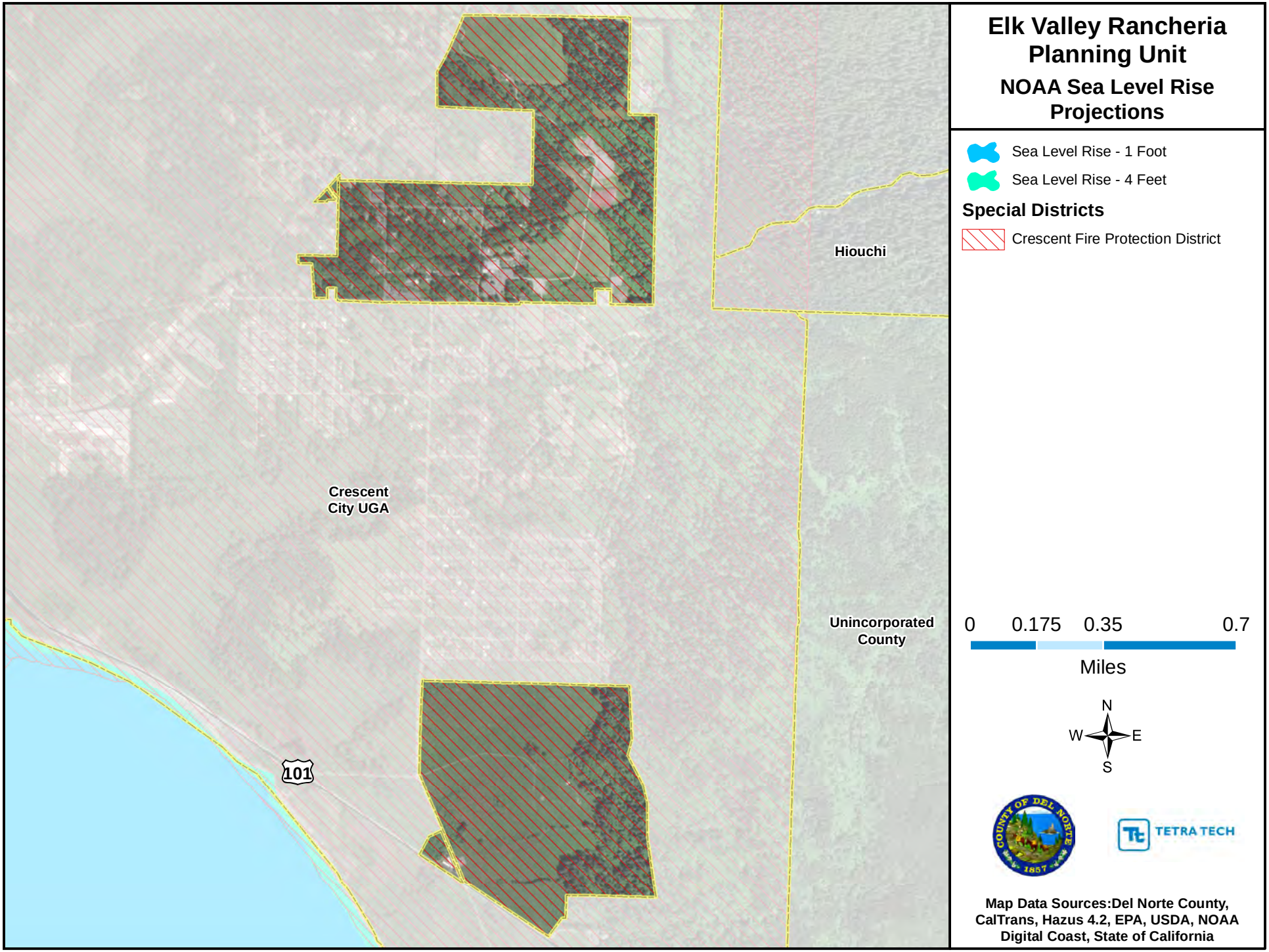
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, California Geological Survey, State of California



Elk Valley Rancheria Planning Unit

NOAA Sea Level Rise Projections

Sea Level Rise - 1 Foot

Sea Level Rise - 4 Feet

Special Districts

Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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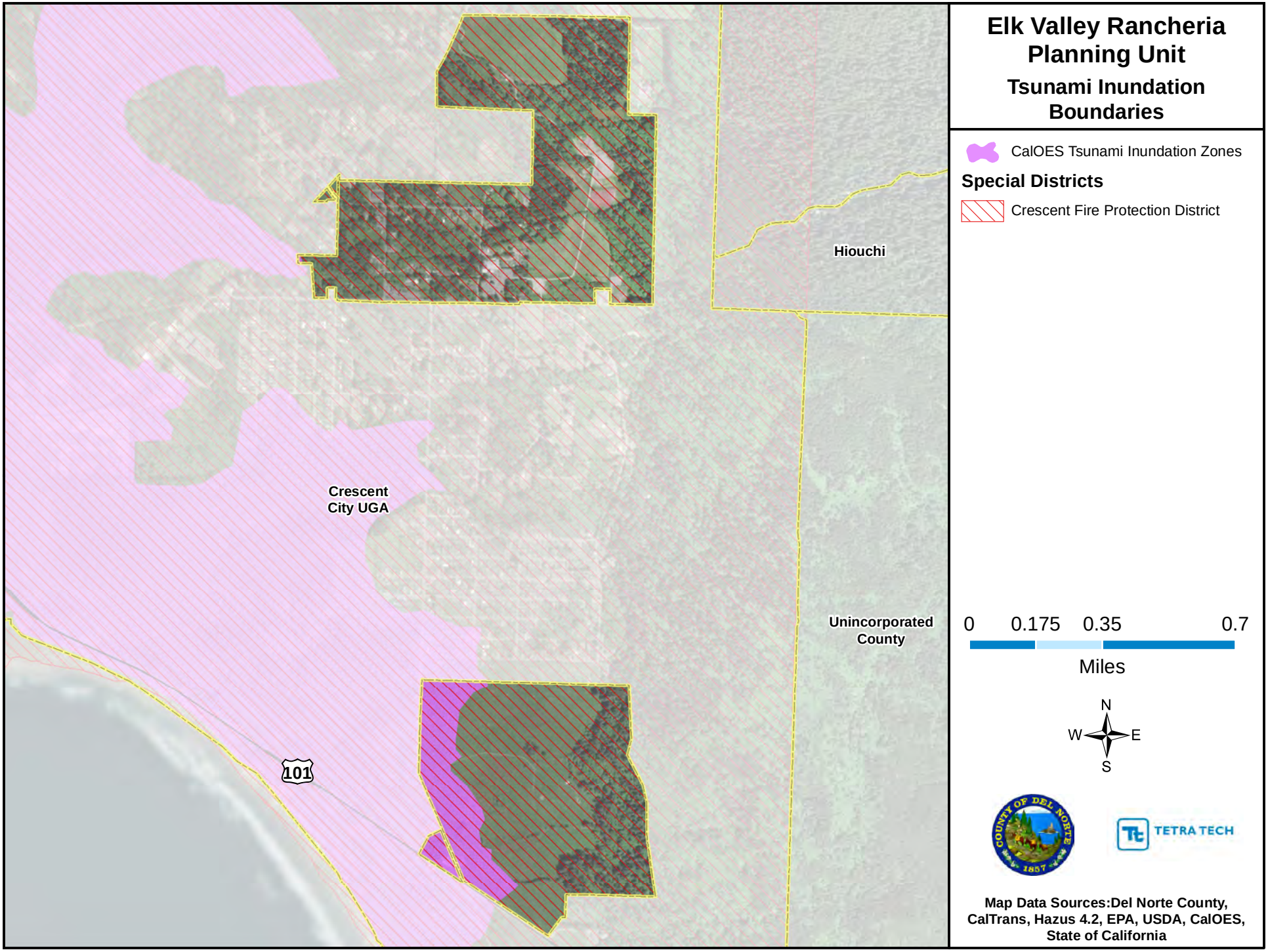
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, NOAA Digital Coast, State of California



Elk Valley Rancheria Planning Unit

Tsunami Inundation Boundaries

CalOES Tsunami Inundation Zones

Special Districts

Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

N
W E
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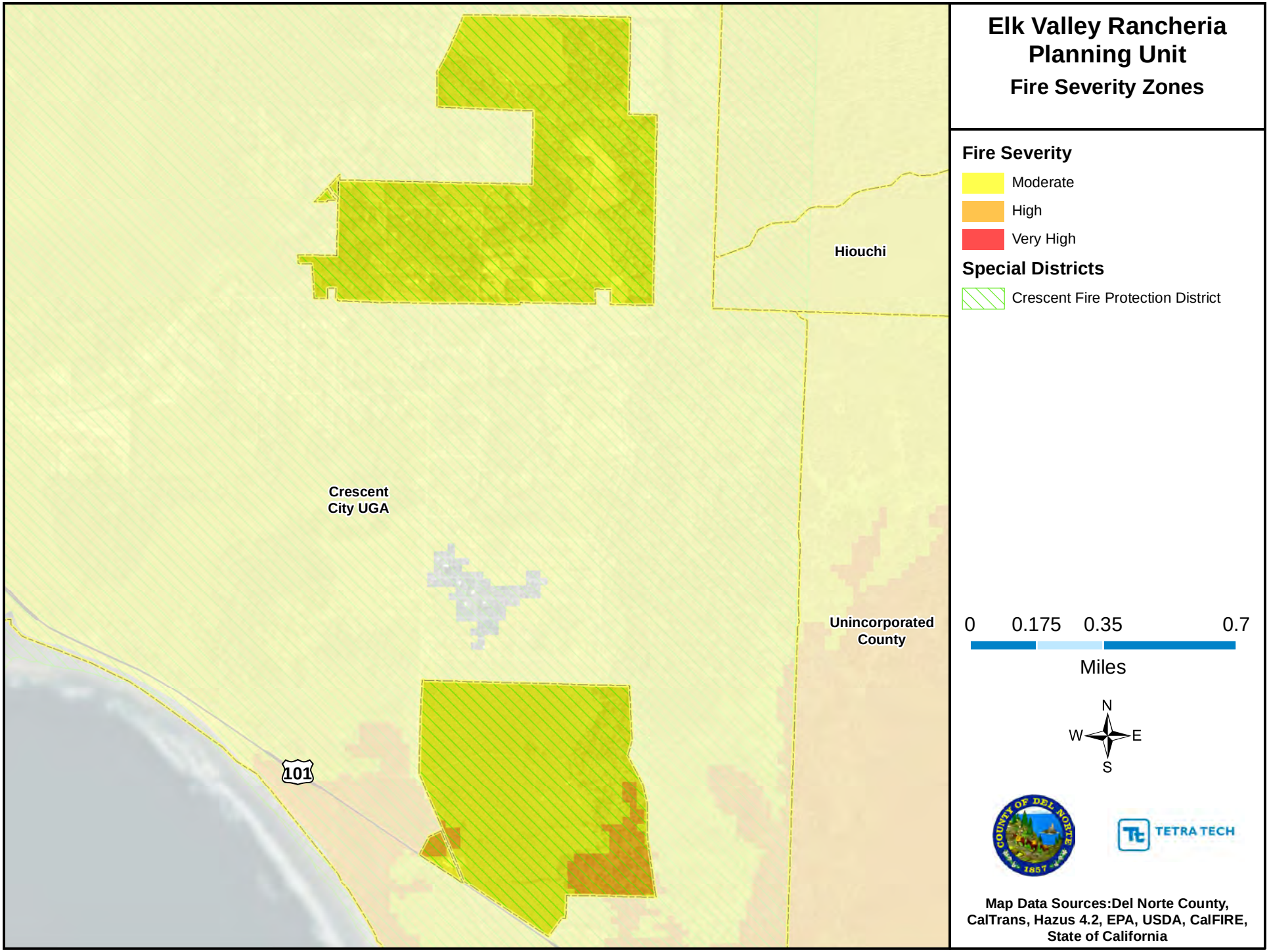
TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalOES, State of California



Elk Valley Rancheria Planning Unit

Fire Severity Zones

Fire Severity

- Moderate
- High
- Very High

Special Districts

- Crescent Fire Protection District

0 0.175 0.35 0.7

Miles

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TETRA TECH

Map Data Sources:Del Norte County, CalTrans, Hazus 4.2, EPA, USDA, CalFIRE, State of California

4. BIG ROCK COMMUNITY SERVICES DISTRICT

The Big Rock Community Services District has participated in local hazard mitigation planning since its involvement as a planning partner in the 2010 *Crescent City/Del Norte County Hazard Mitigation Plan*. The District remained involved as a planning partner for the current Del Norte County hazard mitigation plan update, participating as a Steering Committee member and in the public outreach strategy.

In order to retain funding for the Hillside Stabilization Project, a critical mitigation project designed to secure the District's main water storage tank facility from failure during a small-to-moderate earthquake, the District required an approved hazard mitigation plan update before the Del Norte planning update process was complete. Therefore, the District developed the *Hiouchi Local Hazard Mitigation Plan* and adopted it on August 17, 2017, to meet a deadline for retaining funding eligibility. A second, final revision of the local plan was made on November 16, 2017, and FEMA approval was granted on December 15, 2017.

The District did not complete a new annex for this update, intending instead to incorporate the adopted and approved local plan into the Del Norte County hazard mitigation plan upon completion of the County update. The action plan from the District's local hazard mitigation plan (Section 4.3 of that plan) is included as Appendix D to this volume. The entire final local plan (second revision; available on the District website or by contacting the District), is hereby incorporated by reference into the *Del Norte County Operational Area Hazard Mitigation Plan*. The District will adopt this updated County plan, upon FEMA approval, as its formal hazard mitigation plan in compliance with the federal Disaster Mitigation Act.

5. GASQUET COMMUNITY SERVICES DISTRICT

5.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Michael J Morgan, General Manager
PO Box 284
Gasquet, CA 95543
Telephone: 707-218-5556
e-mail Address: mjmorgan2@gmail.com

Alternate Point of Contact
Samuel Rutledge, Board Member
PO Box 312
Gasquet, CA 95543
Telephone: 707-954-4784
e-mail Address: samrutledge43@icloud.com

5.2 JURISDICTION PROFILE

5.2.1 Overview

Gasquet Community Services District (GCSD) was formed in 1968 to provide a water system to the community, and encompasses approximately 2 square miles. Governed by a five-member elected Board of Directors, the system draws its water from the North Fork of the Smith River at its confluence with the Middle Fork. Water is provided to about 355 service use points for domestic purposes and to the overall community for fire protection. Five part-time employees are responsible for plant operation, line maintenance, and administration. Revenues are based on water usage and line standby charges, new connection fees, and investment interest. The Gasquet Community Services District assumes responsibility for the adoption of this plan; The GCSD Board of Directors will oversee its implementation.

5.2.2 Service Area and Trends

The district serves a population of 775. Its service area covers an area of 2 square miles.

Considered a “disadvantaged” community, GCSD estimates the current service and population to increase by a 0.4 percent per year growth rate, and projects a population of about 822 by 2030.

5.2.3 Assets

Table 5-1 summarizes the critical assets of the district and their value.

5.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as community-capacity-building mitigation actions in the analysis of mitigation actions table at the end of this annex.

Table 5-1. Special Purpose District Assets

Asset	Value
Property	
1.25 acres	$175,000
Critical Infrastructure and Equipment	
Total length of pipe 6.9 miles @ $100. Per foot	$3,600,000
Operational Equipment	$1,669,200
Total:	*$5,269,200*
Critical Facilities	
1 Administrative Building	$350,000
Total:	*$350,000*

5.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 5-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

Table 5-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
Ordinance 2007-1 Establishing Rules and Regulations for Water Service to Residential Tenants by GCSD	6/04/07	
Resolution 2010-01 Necessity to Improve Water Treatment Process and Equipment	01/11/10	To meet regulatory requirement for water treatment
Ordnance 95-5 Establishing Fee and Rate Schedules and Other Conditions, subsequently amended by 2017-1 Followed by Resolution 2017-1 establishing budget	5/8/17	Controls the distribution of water in compliance with district mission; corresponding budget resolution allowance for capital improvement to protect system from catastrophic failures
GCSD Resolution No. 2014-3 Implementing Emergency Water Conservation Measures	8/11/14	Complies with State efforts in response to drought
GCSD Emergency/Disaster Response Plan	01/08/18	Defines district emergency response procedures
GCSD Contamination and Notification Plan	01/08/18	Addresses water contamination threats
Capital Improvement/Capacity Report	2009	Assessed the District's capacity limitations in order to develop an improvement program to systematically meet the future system water demands in a timely manner

5.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 5-3. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 5-4.

Table 5-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding/Improvement Plan	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes, water
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Other	N/A

Table 5-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	On-call engineering consultants selected through requests for statements of qualifications; currently in contract negotiations; Resident surveyors and U.S. Forest Service experts
Engineers or professionals trained in building or infrastructure construction practices	Yes	Board of Directors wealth of experience; County resources; employees with hands-on experience
Planners or engineers with an understanding of natural hazards	Yes	Local Civil Engineers who act as consultants to the district.
Staff with training in benefit/cost analysis	No	N/A
Surveyors	Yes	Local Surveyors available on consulting basis
Personnel skilled or trained in GIS applications	Yes	Local resident Richard Davis Surveyor available on contract basis
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Michael Morgan, General Manager
Grant writers	Yes	On-Call Engineering Firm contract currently in negotiation
Other	No	N/A

5.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 5-5.

5.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 5-6 summarizes the District's adaptive capacity for climate change.

Table 5-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	No N/A
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe	No N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	Yes Water District Board of Directors
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	Yes Fire Dept. & Law Enforcement Radio & County Office of Emergency Services
Do you have any established warning systems for hazard events? • If yes, please briefly describe	Yes Posted Public Notices, Local Radio Announcements, Fire Dept. & Law Enforcement Radio, Telephone

Table 5-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: As it relates to water level, drought & conservation management, flooding, etc.	
Jurisdiction-level monitoring of climate change impacts	Low
Comment: None provided	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: None provided	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: None provided	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment: None provided	
Participation in regional groups addressing climate risks	Low
Comment: None provided	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: Governance authority	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: None provided	
Identified strategies for adaptation to impacts	Low
Comment: None provided	
Champions for climate action in local government departments	Low
Comment: None provided	
Political support for implementing climate change adaptation strategies	Low
Comment: None provided	
Financial resources devoted to climate change adaptation	Low
Comment: None provided	

Criterion	Jurisdiction Rating[a]
Local authority over sectors likely to be negative impacted	Low
Comment: Governance authority	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment: unsure	
Local residents support of adaptation efforts	Low
Comment: unsure	
Local residents' capacity to adapt to climate impacts	Low
Comment: unsure	
Local economy current capacity to adapt to climate impacts	Low
Comment: unsure	
Local ecosystems capacity to adapt to climate impacts	Low
Comment: unsure	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

5.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

5.4.1 Existing Integration

GCSD was not actively involved in the last hazard mitigation planning effort and has recently become proactive in defining the community needs for hazard mitigation. The following plans and programs currently integrate components of the hazard mitigation strategy:

- Negotiations are on-going in contractual relations with an On-Call Engineering Consultant, the first phase to be efforts to obtain grant funding for hazard mitigation planning with emphasis on fire danger, earthquake damages, extreme weather, and contamination. Further, reviews are ongoing with regard to capital improvements, emergency response programs, Board and employee education, and first responder preparations.
- GCSD hazard mitigation status will be reviewed annually by the Board of Directors.

5.4.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, Gasquet Community Services District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the plan maintenance process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Capital Improvement/Capacity Report**—Prepared in December 2009 by Michael Young, Civil Engineer. Assessed District capacity limitations in order to develop an improvement program to meet the future system water demands in a timely manner. The report primarily discussed water source and treatment, but addressed the capital improvements necessary to meet future needs based upon water supply and demand. This report is presently under review as it relates to hazard mitigation and will be updated in part based on the results of the risk assessment conducted as part of the hazard mitigation plan.

5.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 5-7 lists past occurrences of natural hazards for which specific damage was recorded in GCSD. Other hazard events that broadly affected the entire planning area, including GCSD, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 5-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Young Incident (Fire)	N/A	2017	N/A
Gasquet Fire Complex	N/A	2015	N/A
Biscuit Wildfire	N/A	2003	N/A
Blue 2 Wildfire	N/A	2008	N/A
Flood	DR-183	1964	N/A
Severe Weather	N/A	Annually	N/A

5.6 HAZARD RISK RANKING

Table 5-8 presents a local ranking for Gasquet Community Services District of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

5.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- **Wildland Fire**—The GCSD Administrative Building, processing plant, and storage tanks are located in a very high wildfire risk area.
- **Earthquake**—The GCSD Administrative Building, which also houses plant processing equipment, is located in class D soil, which may be prone to liquefaction. Related landslides and obstructed river flow may result.
- **Severe Weather**—Power disruption can occur as a result of severe weather events. Heavy rains can impact surface water quality, bring down trees, and in some cases damage infrastructure.
- **Landslide**—The GCSD Administrative Building, which also houses plant processing equipment, is located in a high landslide susceptibility zone. Road closures and bridge destruction could impact personal safety and damage infrastructure. River flow and clarity may be obstructed.

Table 5-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Wildland fire[c]	(3 x 18) = 54	High
2	Earthquake[a]	(2 x 18) = 36	High
3	Landslide[e]	(3 x 9) = 27	Medium
3	Severe weather[b]	(3 x 9) = 27	Medium
4	Drought[f]	(3 x 5) = 15	Medium
5	Flooding[d]	(2 x 3) = 6	Low
6	Dam failure[g]	(1 x 0) = 0	None
6	Sea level rise[h]	(2 x 0) = 0	None
6	Tsunami[i]	(3 x 0) = 0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on assets and low impact on operations.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in significant property damage.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

- **Post-Disaster Response**

  - Gasquet may become isolated following a major disaster.
  - GCSD has been advised that the local airfield, Ward Field, has been designated by FEMA as a Point of Distribution in the event of disaster, in which case it would behoove the community to develop support education. Community outreach planning, neighbor helping neighbor, for instance, has been identified as a method for addressing emergency needs and planning would address this area. GCSD has also been made aware of communication problems that would likely develop in cases where Gasquet might become isolated. Research is on-going into possible alternate communication sources.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 10.9.

5.8 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 5-9 lists the actions that make up the Gasquet Community Services District hazard mitigation action plan. Table 5-10 identifies the priority for each action. Table 5-11 summarizes the mitigation actions by hazard of concern and mitigation type.

5.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Negotiations are on-going to engage on-call engineering consultants to help with hazard mitigation identification and resolution planning.

Table 5-9. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
GCSD-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas, such as the GCSD Administrative Building.						
Hazards Mitigated: Earthquake, flooding, landslide, wildland fire						
New and Existing	3, 4, 10	GCSD Board of Directors	N/A	High	HMGP, PDM, FMA	Short-term
GCSD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 5, 8	GCSD Board of Directors	N/A	Low	Staff Time, General Funds	Short-term
GCSD-3—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including computer generated monitoring systems.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, wildland fire						
New and Existing	2, 6, 9	GCSD Plant Operation	N/A	Medium	HMGP, PDM	Short-term
GCSD-4—Provide redundancy for critical functions such as well water vs. surface water, river pump system, SCADA monitoring, electrical backup, shut-off controls, hydrants, etc.						
Hazards Mitigated: Earthquake, landslide, severe weather, wildland fire						
New and Existing	2,4,6,9	GCSD General Manager	N/A	Medium	HMGP, PDM, FMA	Long-term
GCSD-5—Obtain On-Call Engineering Consultant in effort to obtain grant funding for Hazard Mitigation Planning						
Hazards Mitigated: Wildland fire, earthquake, severe weather, landslides, contamination						
Existing	1,3,4,6,8	GCSD	N/A	Low	HMGP, PDM, FMA	Short-term
GCSD-6—Establish secondary water distribution/infrastructure/plant location/ground water vs surface water to ensure distribution to entire district in the event of catastrophic interruption to existing system.						
Hazards Mitigated: Wildland fire, earthquake, landslides						
New	2,3,6,9	GCSD General Manager	N/A	High	HMGP, PDM, FMA	Long-term
GCSD-7—Institute warning system and develop evacuation plans for district customers in the event safe water distribution is threatened by hazardous events.						
Hazards Mitigated: Earthquake, wildland sire, severe weather, landslides, contamination						
New	2,5,8,9	GCSD	N/A	Low	General Funds	Short-term
GCSD-8—Reduce exposure and vulnerability to the wildland fire hazard by creating and maintaining defensible space around structures and infrastructure, including the GCSD Administrative Building, partnering with U.S. Forest Service and Gasquet Fire Department.						
Hazards Mitigated: Wildland fire, severe weather						
New	3,4,9	GCSD General Manager	U.S. Forest Service and Gasquet Fire Department	Low	General Funds	Short-term
GCSD-9—Develop emergency communication system. Allow staff to communicate with Board and community at large.						
Hazards Mitigated: Earthquake, wildland sire, severe weather, landslides, contamination						
New	2,4,5,8,9	GCSD Plant Operations	N/A	Low	General Funds	Short-term
GCSD-10—Develop a community outreach program to include website, NOAA weather radios to public and critical facilities, etc.						
Hazards Mitigated: Earthquake, wildland fire, severe weather, landslides						
New and Existing	5,9	GCSD General Manager	County and other local governments	Medium	General Funds	Short-term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
GCSD-11—Purchase and distribute water purification equipment in the event of distribution problems/contamination.						
Hazards Mitigated: Earthquake, wildland sire, severe weather, landslides, contamination						
New	2,4	GCSD Plant Operations	N/A	Low	HMGP	Short-term
GCSD-12—Install shut-off valves/mechanisms to control loss of water & redirect distribution.						
Hazards Mitigated: Landslides, earthquakes, severe weather, contamination						
New and Existing	2,4,6,9	GCSD Plant Operations	N/A	Medium	HMGP, PDM, FMA	Short-term
GCSD-13—Extend water distribution system to "North Fork" community, to include hydrants / infrastructure.						
Hazards Mitigated: Wildland fire, earthquakes, drought, severe weather						
New and Existing	2,3,9	GCSD Board	N/A	High	HMGP, PDM	Long-term
GCSD-14—Purchase and install efficient electronic meters to replace manually read meters to more accurately monitor water usage/loss.						
Hazards Mitigated: Drought						
New and Existing	2,4,9	GCSD General Manager	N/A	Medium	HMGP, PDM, FMA	Short-term

Table 5-10. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
GCSD-1	3	High	High	Yes	Yes	No	Medium	High
GCSD-2	3	Low	Low	Yes	No	Yes	High	Low
GCSD-3	3	High	Medium	Yes	Yes	No	Medium	High
GCSD-4	4	Medium	Medium	Yes	Possibly	No	Medium	Medium
GCSD-5	5	Medium	Low	Yes	Yes	Yes	High	High
GCSD-6	4	High	High	Yes	Possibly	No	Medium	Medium
GCSD-7	4	High	Low	Yes	No	Yes	High	Low
GCSD-8	3	High	Low	Yes	No	Yes	High	Low
GCSD-9	5	High	Low	Yes	No	Yes	High	Low
GCSD-10	2	Medium	Medium	Yes	No	Yes	High	Low
GCSD-11	2	High	Low	Yes	Possibly	No	Medium	Medium
GCSD-12	4	Medium	Medium	Yes	No	Yes	High	Low
GCSD-13	3	High	High	Yes	Possibly	No	Medium	Medium
GCSD-14	3	Medium	Medium	Yes	Possibly	No	Medium	Medium

a. See the introduction to this volume for explanation of priorities.

Table 5-11. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Wildland Fire	8, 13	1, 12	7, 10		3, 4, 6, 9, 11			2, 5, 7, 9, 10
Earthquake	13	1, 12	7, 10		3, 4, 6, 9, 11			2, 5, 7, 9, 10
Landslide	13	1, 12	7, 10		3, 4, 6, 9, 11			2, 5, 7, 9, 10
Severe weather	13		7, 10		3, 4			2, 5, 7, 9, 10
Drought	13, 14			14			14	2, 5
Flooding		1			3			2, 5
Dam failure	—	—	—	—	—	—	—	—
Sea level rise	—	—	—	—	—	—	—	—
Tsunami	—	—	—	—	—	—	—	—

a. See the introduction to this volume for explanation of mitigation types.

5.10 ADDITIONAL COMMENTS

GCSD is a community water district whose purpose is to provide water to the community in accordance with all federal, state and local health and safety standards. Hazard mitigation is limited to fulfilling this purpose.

5.11 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

5.11.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Big Rock Community Services District Local Hazard Mitigation Plan**—Used to provide examples and draw correlations between similar community service districts, needs and potential solutions.
- **Del Norte Local Agency Formation Commission –** Municipal Service Review & Sphere of Influence Update, used to define jurisdictional limitations of District, provide demographics, service and infrastructure capabilities, financial and accountability.
  report dated April 25, 2016
- Gasquet Community Services District official ordinances and resolutions defining formation, mission, and operation of the district.
- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

5.11.2 Staff and Local Stakeholder Involvement in Annex Development

GCSD Board of Directors, General Manager, staff, and interested community members were involved in identifying hazards specific to the water district mission and defining actions. In addition, Craig Bradford (Big Rock Community Services District) was helpful in providing his knowledge and resources.

6. KLAMATH COMMUNITY SERVICES DISTRICT

6.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Margaret Caldwell, Board of Directors Chairman
219 Salmon Avenue
Klamath, CA 95548
Telephone: 707-482-0723
e-mail Address: klamathcsd@gmail.com

Alternate Point of Contact
Sandy Moreno, Fiscal Officer
900 Northcrest Drive, #9
Crescent City, CA 95531
Telephone: 707-464-7769
e-mail Address: BookkeepersLEAS@aol.com

6.2 JURISDICTION PROFILE

6.2.1 Overview

The Klamath Community Services District (KCSD) is located in southern Del Norte County, CA, approximately 20 miles south of Crescent City and 55 miles north of Arcata. The KCSD was formed June 14, 1965 for the purpose of providing water and wastewater services to the unincorporated community of Klamath. The District is approximately 0.44 square miles (285 acres), with a boundary that extends along both sides of Highway 101 for approximately one mile north of the Klamath Glen Road exit. The District extends west to the Klamath River and east to approximately 400 feet beyond existing development. Klamath is located within the northern part of the Yurok Reservation and KCSD serves private and Yurok Tribal lands, facilities and housing. Funding comes primarily through water sales, waste water fees, a government loan and property taxes.

6.2.2 Governing Body Format

KCSD is governed by five locals comprising a Board of Directors/Trustees who are elected in County elections for four-year terms. The organization employs a part-time Distribution/Treatment Operator and a part-time Field Maintenance Operator, and contracts a part-time bookkeeper. In addition, KCSD uses (a) an independent auditing firm on contract (Don Reynolds, CPA) (b) Stover Engineering on contract for engineering services (c) Coast Central Credit Union for financial operations and (d) Black and Rice LLP for legal services. The Board holds internal elections every year to choose a President of the Board, a President Pro-Tem and appoints a Secretary to the Board. All must be members of the Board. Each director/trustee earns a stipend of $40 per meeting to compensate for personal costs of meeting attendance, but otherwise receives no regular compensation and no benefits. The Special District's Municipal Service Review by the Local Agency Formation Commission is current as of May 2016 and is available to interested parties. The KCSD Board of Directors/Trustees assumes responsibility for the adoption of this plan and will oversee its implementation.

6.2.3 Service Area and Trends

Land Uses

KCSD serves the unincorporated community of Klamath including a mix of residential and commercial uses. The District also contains lands designated public facility, resource conservation area, and timberland. Land uses within the District are subject to the Del Norte County General Plan (2003) and Zoning Code.

Current Population

There are approximately 40 homes and 22 businesses within the District boundaries. The Village Mobile Home & RV Park has 33 lots and there are 2 hotels and 1 seasonal RV Park. The District estimates 3.3 individuals (aged people, adults and children) per household, for an estimated District population of 240. Due to seasonal tourism and recreational uses, the District estimates that the summer population exceeds 360.

Projected Growth

According to the Census, the total population in Del Norte County was 27,507 in 2000 and 28,610 in 2010. The population grew in Del Norte County at a rate of 4.0 percent between the 2000 and 2010 census, or at an annual growth rate of 0.4 percent.

Water Service

KCSD water infrastructure includes three active untreated wells, one 125,000-gallon water storage tank, and a water distribution system. Water is metered and supplied to homes through ¾" supply lines. KCSD serves approximately 62 water connections within the District. In 2014 the District hooked up three new commercial facilities to the water system including a hotel/casino, a Knowledge and Cultural Park and the Yurok Tribe Justice Center. The water system was designed to meet both domestic water and fire flow requirements.

Wastewater Service

KCSD is responsible for collection, treatment, and disposal of the community's wastewater. The present service area consists of commercial and residential areas. The District provides approximately 37 residential and 12 commercial wastewater service connections as of 2015. These numbers likely have not changed due to a Cease and Desist Order that has been placed on the wastewater system by the North Coast Regional Water Quality Control Board (NCRWQCB) since 2006. The wastewater system is capable of serving a maximum capacity of 49 connections. The District has received a State Water Resources Control Board Proposition 1 grant in the amount of $500,000 to provide a Waste Water System Renovation Planning Project which includes a rate study.

6.2.4 Assets

Table 6-1 summarizes the critical assets of the district and their value.

Table 6-1. Special Purpose District Assets

Asset	Value
Property	
285 acres of land	$858,000
Critical Infrastructure and Equipment	
Green Diamond Well (leased for $50/yr)	$200,000
Highway 101 Wells (2)	$400,000
125,000-gallon potable water storage tank	$300,000
Approximately 5000 feet of waste line	$500,000
Approximately 5000 feet of water line	$500,000
Total:	***$2,400,000***
Critical Facilities	
Water Pump House	$25,000
Chlorination Bldg	$7,500
Waste System Electrical Bldg	$35,000
Waste System Pump House	$50,000
Total:	***$117,500***

6.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as Community Capacity Building mitigation actions in the analysis-of-mitigation-actions table in Section 6.8.

6.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 6-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan. The District is initiating a comprehensive review of the plans, programs, rules and regulations of the County, State and other jurisdictions in order to create the District's initial plans for how these plans and programs can support hazard mitigation within the District.

6.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 6-3. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 6-4.

6.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 6-5.

Table 6-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
KCSD Sewer System Management Plan (SSMP)	2014	
KCSD Operation and Maintenance Manual – Wastewater Facility	2017	
KCSD Policy Manual	2017	
Del Norte County Code	2018	Updates made on an ongoing basis
Del Norte County's Catastrophic Disaster Plan		
Del Norte County Comprehensive Emergency Management Plan	2005	
Del Norte County's Continuity of Government Plan		
Del Norte County's Continuity of Operations Plan		
Del Norte County Emergency Services		
Del Norte County Sheriff's Department		
Del Norte Local Agency Formation Commission	May 2016	
California Government Code	2018	Updates made on an ongoing basis
California Department of Public Health		
California and U.S. Environmental Protection Agencies		
California Environmental Quality Act		
California Coastal Commission		
Cal Fire		
California Highway Patrol		
California Department of Transportation (CalTrans)		
California Office of Emergency Management Services		
California Water Resources Control Board		
Federal Emergency Management Agency		
Federal Endangered Species Act		
U. S. Forest Service		
Army Corps of Engineer		
U.S. Department of Homeland Security		

Table 6-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes, water and sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Other – Cost Sharing Agreements with other local Special Districts	Yes

Table 6-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Stover Engineering - Contractor
Engineers or professionals trained in building or infrastructure construction practices	Yes	Stover Engineering - Contractor
Planners or engineers with an understanding of natural hazards	Yes	Stover Engineering - Contractor
Staff with training in benefit/cost analysis	Yes	Contract Bookkeeper
Surveyors	Yes	Stover Engineering - Contractor
Personnel skilled or trained in GIS applications	Yes	Stover Engineering - Contractor
Scientist familiar with natural hazards in local area	Yes	Stover Engineering - Contractor
Emergency manager	Yes	Distribution/Treatment Operator
Grant writers	Yes	Contract Bookkeeper

Table 6-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	District's President serves as the Public Information Officer and the District's Contract Bookkeeper provides Communication Office services.
Do you have personnel skilled or trained in website development?	The District's Contract Bookkeeper has website development knowledge.
Do you have hazard mitigation information available on your website?	District does not have a website at this time.
Do you utilize social media for hazard mitigation education and outreach?	The District's Board members use social media for outreach.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Not at this time.
Do you have any other programs already in place that could be used to communicate hazard-related information?	In the District's small community word of mouth seems to be best method to communicate hazard related information. Mailings in the monthly billing statement are also used to communicate with the community.
Do you have any established warning systems for hazard events?	Siren system for early warning situations are in operation

6.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 6-6 summarizes the District's adaptive capacity for climate change.

6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

Table 6-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: *The District's planning is affected by the increase in wildfires, flooding, severe weather conditions and the threats to sensitive species, namely salmon.*	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: *The District is noting the changing patterns and using that information for planning purposes.*	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment: *The District's Contracted Engineer assists the Board with this assessment.*	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: *No comments at this time*	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: *Both the District's Waste Water Renovation Project and Water System upgrade take into account potential climate impacts when deciding location of assets.*	
Participation in regional groups addressing climate risks	High
Comment: *The District participates in County sponsored committees to keep informed.*	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Medium
Comment: *Climate change impacts have affected the planning process for both the waste water system renovation and water system upgrades.*	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: *No comments at this time*	
Identified strategies for adaptation to impacts	Medium
Comment: *No comments at this time*	
Champions for climate action in local government departments	Low
Comment: *No comments at this time*	
Political support for implementing climate change adaptation strategies	Medium
Comment: *No comments at this time*	
Financial resources devoted to climate change adaptation	Medium
Comment: *No comments at this time*	
Local authority over sectors likely to be negative impacted	Medium
Comment: *No comments at this time*	
Public Capacity	
Local residents knowledge of and understanding of climate risk	Low
Comment: *No comments at this time*	
Local residents support of adaptation efforts	Low
Comment: *No comments at this time*	
Local residents' capacity to adapt to climate impacts	Low
Comment: *No comments at this time*	
Local economy current capacity to adapt to climate impacts	Low
Comment: *No comments at this time*	
Local ecosystems capacity to adapt to climate impacts	Low
Comment: *No comments at this time*	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

6.4.1 Opportunities for Future Integration

As this hazard mitigation plan is implemented, Klamath Community Services District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1.

Based on the capability assessment, the District is initiating a comprehensive review of the plans, programs, rules and regulations of the County, State and other jurisdictions. The plans and programs listed directly below have been specifically identified for review. As these plans, programs, rules and regulations are reviewed, District staff will identify opportunities to integrate the goals or recommendations of the hazard mitigation plan and will implement integration upon the next review and update of the plan or program:

- District Operations Plan
- Growth & Development Plan
- Emergency Response Plan
- Klamath Disaster Plan
- Catastrophic Disaster Plan
- Post Disaster Action Plan
- Fire Hazard Mitigation Plan
- Earthquake Assessment Projections
- Hazardous Materials Handling
- Public Protection Assessment
- Cal Trans Interface Planning
- Planning for Public Outreach Programs
- Capital Improvement Planning
- Financial Management Planning District Rate Setting Process
- Critical Infrastructure/Equipment Acquisition
- Annual Budgeting.

6.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 6-7 lists past occurrences of natural hazards for which specific damage was recorded in Klamath Community Services District. Other hazard events that broadly affected the entire planning area, including Klamath Community Services District, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

6.6 HAZARD RISK RANKING

Table 6-8 presents a local ranking for Klamath Community Services District of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 6-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Wildfires		September 2017	
High wind		April 2017	
Severe winter storms		February 2017	$300,000
Flooding, landslides		December 2016	
High winds, flooding		November 2016	
Wildfires		Summer 2015	
Tsunami waves	1968	March 2011	
Flooding		December 2008	$75,000
Wildfires		Summer 2008	
Severe storms, flooding, mudslides, landslides	1628	December 2005	$200,000
Wildfire		Summer 2002	
Flood		November 1998	
Earthquake (mild)		Fall 1998	
Severe winter storms and flooding	1203	February 1998	
Severe winter storms, flooding and landslides	1155	December 1996	
Severe winter storms, flooding and landslides	1044	January 1995	
Fishing loss	1038	May 1994	
Severe winter storms, flooding and landslides	979	January 1993	
Severe winter storms, and flooding	758	February 1986	
Earthquake (moderate)		December 1985	
Coastal storms, floods	677	January 1983	
Severe storms, flooding	329	April 1972	
Severe storms, flooding	283	February 1970	
Heavy rain & flooding	183	December 1964	

Table 6-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Wildland fire[c]	(3 x 18) = 54	High
2	Tsunami[i]	(3 x 15) = 45	High
3	Earthquake[a]	(2 x 18) = 36	High
3	Landslide[e]	(3 x 12) = 36	High
4	Flooding[d]	(2 x 15) = 30	High
5	Severe weather[b]	(3 x 9) = 27	Medium
6	Dam failure[g]	(1 x 18) = 18	Medium
7	Drought[f]	(3 x 5) = 15	Medium
8	Sea level rise[h]	(2 x 0) = 0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on assets and low impact on operations.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in significant property damage.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

6.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the KCSD. The following issues were identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Dam failure—KCSD facilities are located in dam failure inundation areas.
- Flooding—The KCSD Wastewater Treatment Plan is located in the 1-percent annual chance special flood hazard area. The District is currently performing a waste water treatment plan study and this vulnerability has been included in the design of the new plant.
- Earthquake—The KCSD Wastewater Treatment Plant is located in class D soil, which may be prone to liquefaction. The District is currently performing a waste water treatment plan study and this vulnerability has been considered in the design of the new plant.
- Landslide—A 125,000 gallon water tank is located in a very high landslide susceptibility zone. The District is currently working with the Yurok Tribe to identify an alternate site for a125,000 gallon water tank.
- Severe weather—Power disruption can occur as a result of severe weather events.
- Wildland fire—KCSD facilities are located in high fire severity zones.
- Tsunami—The KCSD Wastewater Treatment Plant is located in a tsunami inundation zone. The District is currently performing a waste water treatment plan study and this vulnerability has been considered in the design of the new plant.
- Isolation—Several hazard events may result in isolation of the District and/or the inability for District staff and residents to evacuate. In the event that Highway 101 becomes inaccessible, the only available evacuation route is an extremely steep grade and is not well maintained. The District is currently working with the Yurok Tribe to resolve this issue.

Mitigation actions addressing these issues were prioritized for consideration in the action plan (Section 10.9).

6.8 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 6-9 lists the actions that make up the Klamath Community Services District hazard mitigation action plan. Table 6-10 identifies the priority for each action. Table 6-11 summarizes the mitigation actions by hazard of concern and mitigation type.

6.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In preparing this document KCSD has identified a critical need to prepare plans to address hazard mitigation and is dedicated to committing time and resources to insure that the plans are completed in a timely manner. As the District's systems age out the risks become more significant.

6.10 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

6.10.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulations were reviewed to provide information for this annex.

- **Crescent City/Del Norte County Hazard Mitigation Plan Volume 2 Planning Partners Annexes**—The plan was used to inform KCSD on the status of previously identified hazard mitigation action items.

- **Del Norte Local Agency Formation Commission Municipal Service Review & Sphere of Influence Update**—This report was used to capture published district information
- **Hiouchi Local Hazard Mitigation Plan (Single Jurisdiction LHMP**)—This plan was used as a model for completion of the Klamath CSD plan.
- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used in development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development

6.10.2 Staff and Local Stakeholder Involvement in Annex Development

This annex was developed over the course of several months with input from Board members, contractors and staff performing operations, finance and capital planning functions.

Table 6-9. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
KCSD-1—Renovate wastewater system located in high hazard area that has experienced repetitive losses. Incorporate mitigation into renovation plans.						
Hazards Mitigated:			Earthquake, flooding, landslide, tsunami, wildland fire			
Existing	3, 4, 10	KCSD	N/A	High	HMGP, PDM, FMA	Short-term
KCSD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:			Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
New and Existing	1, 5, 8	Del Norte County	KCSD	Low	Staff Time, General Funds	Short-term
KCSD-3—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including the waste water pumping station.						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
Existing	2, 6, 9	KCSD	N/A	Medium	HMGP, PDM. Staff Time, General Funds	Short-term
KCSD-4—Enhance ongoing public education programs to include components on hazards and mitigation.						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
Existing	1,3,5	KCSD	N/A	Low	HMGP, PDM. Staff Time, General Funds	Ongoing
KCSD-5—Create website to include preparedness, warning and mitigation information on all hazards.						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
New	2,3,5,6,9	KCSD	N/A	Low	HMGP, PDM. Staff Time, General Funds	Short-term and ongoing
KCSD-6—Procure emergency communications equipment such as HAM radios.						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
New	2,5,6,9	KCSD		Medium	HMGP, SRF	Short-term
KCSD-7—Draft and adopt an Emergency Response Plan						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
New	1,2,3,4,6,8,9	KCSD	N/A	Low	HMGP, PDM	Short-term
KCSD-8—Draft and adopt a Catastrophic Disaster Plan						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
New	1,2,3,4,6,8,9	KCSD	N/A	Low	HMGP, PDM	Short-term
KCSD-9—Draft and adopt a Post Disaster Action Plan that includes grant funding, debris removal and long-term recovery planning components, addressing both public and private assets.						
Hazards Mitigated:			Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire			
New	1,2,3,4,6,8,9	KCSD	N/A	Low	HMGP, PDM	Short-term
KCSD-10—Improve accessibility/maintenance of evacuation road.						
Hazards Mitigated:			Dam failure, flooding, tsunami			
New	3,5	KCSD	Yurok Tribe	Medium	HMGP, PDM, FMA	Short-term
KCSD-11—Replace water distribution lines to avoid catastrophic water loss. Life cycle expectancy ends in 2025.						
Hazards Mitigated:			Drought, earthquake			
New	1,3,4,9	KCSD	N/A	High	HMGP, PDM	Short-term
KCSD-12—Continue to work with the Yurok Tribe to identify an alternate site for a 125,000 gallon water tank located in a landslide hazard area.						
Hazards Mitigated:			Landslide			
Existing	3, 4, 10	KCSD	Yurok Tribe	Medium	Yurok Tribe Funds	Short-term

Table 6-10. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[b]
KCSD-1	3	High	High	Yes	Yes	No	High	High
KCSD-2	3	Low	Low	Yes	No	Yes	Medium	Low
KCSD-3	3	High	Medium	Yes	Yes	No	Medium	High
KCSD-4	3	Low	Low	Yes	Yes	Yes	High	High
KCSD-5	5	Medium	Low	Yes	Yes	No	Medium	Medium
KCSD-6	4	High	Medium	Yes	Yes	No	Medium	High
KCSD-7	7	Medium	Low	Yes	Yes	Yes	High	Medium
KCSD-8	7	Medium	Low	Yes	Yes	Yes	High	Medium
KCSD-9	7	Medium	Low	Yes	Yes	Yes	High	Medium
KCSD-10	2	High	Medium	Yes	Yes	No	Medium	High
KCSD-11	4	High	High	Yes	Yes	No	Medium	High
KCSD-12	3	Medium	Medium	Yes	No	Yes	High	Low

a. Explanation of Implementation Priorities
- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable and project can be completed in 1 to 5 years once funded.

b. Explanation of Grant Pursuit Priorities
- High Priority—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
- Medium Priority—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- Low Priority—An action that has not been identified as meeting any grant eligibility requirements.

Table 6-11. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type (see notes for definition)							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Wildland fire	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11,	2, 4, 5, 7, 8, 9
Tsunami	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Earthquake	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Landslide	2, 3, 4, 5, 7, 8, 9, 10, 11	11, 12	2, 3, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Flooding	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11,	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Severe weather	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Dam failure	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Drought	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9
Sea level rise	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 11	2, 3, 4, 5, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 5, 6	1, 11	1, 2, 4, 5, 7, 8, 9, 10, 11	2, 4, 5, 7, 8, 9

Notes

Prevention – Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.

Property Protection – Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation structural retrofit, storm shutters, and shatter-resistant glass.

Public Education and Awareness – Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.

Natural Resource Protection – Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.

Emergency Services – Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services and the protection of essential facilities.

Structural Projects – Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

Climate Resilient – Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise.

Community Capacity Building – Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences,. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

7. SMITH RIVER COMMUNITY SERVICES DISTRICT

7.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Chris Vaughan, General Manager
241 First Street
Smith River, CA 95567
Telephone: 707-487-5381
e-mail Address: general.manager@srwater.net

Alternate Point of Contact
Kitty Demry, Office Manager
241 First Street
Smith River, CA 95567
Telephone: 707-487-5381
e-mail Address: office.admin@srwater.net

7.2 JURISDICTION PROFILE

7.2.1 Overview

The Smith River Community Services District (SRCSD) was formed by Resolution of the Del Norte County Board of Supervisors on June 22, 1970 following an election on June 16, 1970. The special district was formed to provide potable water to district residents, although the organizing documents allow the District to expand its services to other areas as allowed by government code. On January 9, 1989, the SRCSD passed Resolution 89-1, Resolution of Intent to Establish Street Lighting Zone Within a Portion of the Smith River Community Services District, which allowed the SRCSD to provide street lighting services, primarily in the town of Smith River, California.

The SRCSD is governed by a five-member elected Board of Directors, which assumes responsibility for the adoption of this plan and will oversee its implementation. The SRCSD provides water service to approximately 600 connections, with an additional 150 standby customers who do not currently receive water service. The SRCSD provides street lighting services to approximately 200 residents within the boundary of the street lighting zone. The SRCSD also owns the Smith River Community Hall, which houses the district offices and is available for private rental by District residents or for public events.

The SRCSD receives funds through user fees, revenue from the sale of water, property tax revenue, county share income and facility rental of the community hall. The SRCSD maintains three distinct budget units for water services, streetlights and the community hall.

7.2.2 Service Area and Trends

The district serves a population of 2,015. Its service area covers an area of 4,694 acres (7.33 square miles).

The SRCSD is included in both the County of Del Norte General Plan and the Smith River Rancheria Tribal area plan. Both plans anticipate residential and non-residential Visitor-Serving Commercial growth in the SRCSD service area. Such growth would cause an increase in the number of housing units within the service area, as well as an increase in commercial facilities, thus requiring an expansion of the district's service delivery system. It is anticipated that additional areas of development may wish to annex to the SRCSD. Such annexation would

represent an increase in the size and value of the district's service area and an increase in the number of users. This type of growth would also require an expansion of the district's delivery system.

7.2.3 Assets

Table 7-1 summarizes the critical assets of the district and their value.

Table 7-1. Special Purpose District Assets

Asset	Value
Property	
6.89 acres of land	$243,550
Critical Infrastructure and Equipment	
Three 25 horsepower pumps	$12,000
One 20 horsepower pump	$4,000
0.5 miles of 10-inch A/C pipe	$106,000
7.2 miles of 8-inch A/C pipe	$1,330,140
2.38 miles of 6-inch A/C pipe	$440,725
0.75 miles of 4-inch A/C pipe	$127,380
8.97 miles of 8-inch PVC pipe	$1,658,430
3.80 miles of 6-inch PVC pipe	$696,400
0.17 miles of 4-inch PVC pipe	$28,800
0.02 miles of 8-inch HDPE pipe.	$40,000
Two 250,000-gallon redwood storage tanks	$750,000
Three 100,000-gallon redwood storage tanks	$425,000
One 75,000-gallon redwood storage tank	$150,000
One 40,000-gallon redwood storage tank	$60,000
One 10,000-gallon redwood storage tank	$10,000
Four 10-inch gate valves	$3,900
One hundred 8-inch gate valves	$87,501
Forty-nine 6-inch gate valves	$27,440
Ten 4-inch gate valves	$5,400
Four 40-foot wells (need value)	$7000
Total:	*$5,963,116*
Critical Facilities	
Smith River Community Hall	$1,500,192
Four pump houses and associated controls	$60,000
Five booster houses and associated controls	$250,000
Maintenance structure	$40,000
Treatment structure	$75,000
Total:	*$1,925,192*

7.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as Community Capacity Building mitigation actions in the Analysis of Mitigation Actions table in Section 10.9.

7.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 7-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

Table 7-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
County of Del Norte General Plan	2011	
Del Norte County Codes	2018	
State of California codes	2018	
Drought control ordinance	1971	Required by law
County of Del Norte Emergency Operations Plan	2005	

7.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 7-3. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 7-4.

Table 7-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes, water and street lights
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Other	Revenue from facility rental

Table 7-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer/GHD/PE, contract support
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer/GHD/PE, contract support
Planners or engineers with an understanding of natural hazards	Yes	Engineer/GHD/PE, contract support
Staff with training in benefit/cost analysis	Yes	GHD, contract support
Surveyors	Yes	GHD, contract support
Personnel skilled or trained in GIS applications	Yes	GHD, contract support
Scientist familiar with natural hazards in local area	Yes	GHD, contract support
Emergency manager	No	N/A
Grant writers	Yes	GHD, contract support

7.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 7-5.

Table 7-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	No N/A
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe	No N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	No N/A
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	No N/A
Do you have any established warning systems for hazard events? • If yes, please briefly describe	No N/A

7.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 7-6 summarizes the District's adaptive capacity for climate change.

Table 7-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	medium
Comment: None provided	
Jurisdiction-level monitoring of climate change impacts	low
Comment: None provided	
Technical resources to assess proposed strategies for feasibility and externalities	high
Comment: None provided	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	low
Comment: None provided	
Capital planning and land use decisions informed by potential climate impacts	low
Comment: None provided	
Participation in regional groups addressing climate risks	medium
Comment: None provided	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	low
Comment: None provided	
Identified strategies for greenhouse gas mitigation efforts	low
Comment: None provided	

Criterion	Jurisdiction Rating[a]
Identified strategies for adaptation to impacts	low
Comment: None provided	
Champions for climate action in local government departments	low
Comment: None provided	
Political support for implementing climate change adaptation strategies	medium
Comment: None provided	
Financial resources devoted to climate change adaptation	low
Comment: None provided	
Local authority over sectors likely to be negative impacted	low
Comment: None provided	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	low
Comment: None provided	
Local residents support of adaptation efforts	low
Comment: None provided	
Local residents' capacity to adapt to climate impacts	low
Comment: None provided	
Local economy current capacity to adapt to climate impacts	low
Comment: None provided	
Local ecosystems capacity to adapt to climate impacts	low
Comment: None provided	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

7.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

7.4.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, Smith River Community Services District made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. No plans or programs were identified by the District where integration had occurred over the performance period of the 2010 hazard mitigation plan. However, the following plans and programs currently integrate components of the hazard mitigation strategy, but are not under the authority of the District:

- **Del Norte County General Plan—**The Del Norte County General Plan dictates land uses for much of the district's service area. The General Plan includes ongoing programs related to reducing exposure to hazards.
- **Building Codes**—The District is subject to building code requirements that consider risk from natural hazard events.

7.4.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, Smith River Community Services District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment did not identify any opportunities for District plans programs to integrate goals or recommendations of the hazard mitigation plan in the future; however, the District is a participant in the following plans, which offer such an opportunity:

- **Del Norte County Emergency Operations Plan—**Information from the risk assessment can be incorporated into the emergency operations plan to best prepare for emergency situations resulting from natural hazard events.

7.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 7-7 lists past occurrences of natural hazards for which specific damage was recorded in Smith River Community Services District. Other hazard events that broadly affected the entire planning area, including Smith River Community Services District, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 7-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Flooding/ Hillside at Spyglass	DR-4308	2-14-17	$11,000
Severe Weather/Wind	N/A	2/24/2008	N/A
Severe Weather/Snow, Sleet, Blizzard	N/A	1/5/2008	N/A
Severe Weather/Wind	N/A	¼/2008	N/A
Severe Weather/Wind	N/A	12/3/2007	N/A
Severe Weather/Wind	N/A	11/12/2006	N/A
Earthquake	N/A	7/16/2006	N/A
Earthquake	N/A	3/25/2006	N/A
Severe Storms/Landslides	DR-1628	2/3/2006	N/A
Severe Weather/Wind	N/A	1/1/2006	N/A
Severe Weather/Wind	N/A	12/30/2005	N/A
Earthquake	N/A	6/14/2005	N/A
Severe Weather/Wind	N/A	1/8/2005	N/A
Severe Weather/Lightning	N/A	1/7/2005	N/A
Severe Weather	N/A	12/15/2003	N/A
Severe Weather	N/A	9/17/2003	N/A
Earthquake	N/A	8/15/2003	N/A
Severe Weather/Lightning	N/A	5/30/2003	N/A
State Road Damage	N/A	1/1/2003	N/A
Severe Weather	N/A	12/15/2002	N/A
Severe Weather	N/A	11/7/2002	N/A
Biscuit Wildfire	N/A	07/13/2002	N/A

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Earthquake	N/A	6/17/2002	N/A
Severe Weather	N/A	12/1/2001	N/A
Severe Storms	N/A	11/19/2001	N/A
Earthquake	N/A	9/20/2001	N/A
Earthquake	N/A	1/13/2001	N/A
Earthquake	N/A	3/16/2000	N/A
El Nino Floods	DR-1203	2/9/1998	N/A
Severe Storms/Flooding	DR-1155	¼/1997	N/A
Severe Winter Storms	N/A	12/9/1995	N/A
Severe Winter Storms	N/A	1/13/1995	N/A
Earthquake	N/A	4/25/1992	N/A
Flood	N/A	11/22/1988	N/A
Wildland Fires	N/A	9/10/1987	N/A
Severe Storms/Flooding	DR-758	2/18/1986	N/A
Winter Storms	DR-677	2/9/1983	N/A
Severe Storms/Flooding	N/A	11/13/1981	N/A
Winter Storms	N/A	10/3/1974	N/A
Severe Storms/Flooding	DR-329	4/5/1972	N/A

7.6 HAZARD RISK RANKING

Table 7-8 presents a local ranking for Smith River Community Services District of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

7.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Earthquake
  - The SRCSD Shop is located on Class D soils, which may be prone to liquefaction. Service provision may be disrupted due to a water main breaks resulting from an earthquake.
  - The District's eight water storage tanks should be evaluated for seismic resilience, as most were not Constructed under the current seismic code, and the tanks may need retrofits or replacement.
- Landslide
  - The Spyglass water pumping station and water storage tank are located in very high/existing landslide hazard areas.

Table 7-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake[a]	(2 x 12) = 36	High
2	Landslide[e]	(3 x 18) = 36	High
3	Wildland Fire[c]	(3 x 11) = 33	High
4	Severe weather[b]	(3 x 9) = 27	Medium
5	Flooding[d]	(2 x 9) = 18	Medium
6	Tsunami[i]	(3 x 4) = 12	Low
5	Drought[f]	(3 x 3) = 9	Low
8	Sea level rise[h]	(2 x 3) = 6	Low
9	Dam failure[g]	(1 x 0) = 0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on assets and low impact on operations.
c. Based on Very High and High Fire Severity Zones. Water-related industry increases rating.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, no impact on assets and high impact on operations.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

- Wildfire
  - A District water tank and the SRCSD shop are located in very high and high wildfire areas, respectively.
- Severe weather
  - Power disruption can occur as a result of severe weather events.
- Flooding
  - Wells are located near Rowdy Creek; prolonged flooding could affect water quality issues related to THM.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in 7.9.

7.8 STATUS OF PREVIOUS PLAN ACTIONS

Table 7-9 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

7.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 7-10 lists the actions that make up the Smith River Community Services District hazard mitigation action plan. Table 7-11 identifies the priority for each action. Table 7-12 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 7-9. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
SRCSD 1—Local power generation facilities. May include purchase of generators as well as study of feasibility of wind/solar generation facilities in the Smith River area.			X	SRCSD-3
Comment: *Resources were not available to support action implementation*				
SRCSD 2—Seismic retrofit of critical facilities, including hall improvements necessary for use as an emergency shelter.		X		N/A
Comment: *We are currently in process with the county on a CDBG grant, which does not address this improvement; however. we are always open to sustaining our future. As it stands currently, we do not see the feasibility.*				
SRCSD 3—Seismic retrofit of vulnerable pipe, and other water treatment/delivery infrastructure.			X	SRCSD-1
Comment: *Resources were not available to support action implementation*				
SRCSD 4—Replace wooden tanks with larger, stronger metal tanks, secure foundations, install additional hydrants. (In partnership with Smith River Fire Protection District)			X	SRCSD-4
Comment: *Resources were not available to support action implementation*				
SRCSD 5—Develop secondary water sources and infrastructure outside of hazard zones; improve filtration system to respond to increased turbidity caused by flood.			X	SRCSD-5
Comment: *Resources were not available to support action implementation*				
SRCSD 6—Public Education re: water conservation in drought conditions—encouragement of rainwater capture for firefighting use.		X		
Comment: *Not practical as we aren't in a drought zone.*				
SRCSD 7—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.	X		X	SRCSD-2
Comment: *SRCSD has participated in the plan update process and will continue to participate in the updated plan maintenance strategy throughout the performance period of the plan update.*				
SRCSD 8— Support countywide initiatives identified in Volume 1.	X			N/A
Comment: *SRCSD supported the county-wide initiatives identified in the 2010 plan and will continue to support the updated initiatives identified in the plan update.*				

Table 7-10. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
SRCSD-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard, including but not limited to vulnerable pipe and other water treatment/delivery infrastructure.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire, sea level rise						
Existing	3, 4, 10	SRCSD	GHD	High	HMGP, PDM, FMA	Short-term
SRCSD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 5, 8	SRCSD	GHD	Low	Staff Time, General Funds	Short-term
SRCSD-3—Purchase generators for critical facilities and infrastructure that lack adequate back-up power. Also consider the use of wind/solar generation facilities.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 6, 9	SRCSD	N/A	Medium	HMGP, PDM	Short-term
SRCSD-4—Replace wooden tanks with larger, stronger metal tanks, secure foundations, install additional hydrants.						
Hazards Mitigated: Earthquake, landslide, wildland fire						
New	3, 4, 6	SRCSD	SRFPD	$1.4 million; High	General Funds, CBDG, USDA, CDWR	Short-term
SRCSD-5—Develop secondary water sources and infrastructure outside of hazard zones; improve filtration system to respond to increased turbidity caused by flooding.						
Hazards Mitigated: Earthquake, flooding, severe weather, drought						
New and Existing	3, 4, 6	SRCSD	N/A	Medium	General Funds, CDBG, USDA, CDWR	Short-term
SRCSD-6—New Radio Read Water Meters for the ability to track differential pressure in case of mainline breaks throughout the system which would indicate a leak thereby accelerating the process of repair.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami						
Existing	3, 4, 6	SRCSD	GHD	Medium	HMGP, General Funds	Short-term
SRCSD-7—Upgrade the existing SCADA system						
Hazards Mitigated: Earthquake, landslide, wildland fire, flooding, tsunami, severe weather						
Existing	2, 9	SRCSD	GHD	High	General Funds	Short-term
SRCSD-8—Install a complete emergency communications system along with a 70'-0" antenna tower for emergency HF/ VHF / UHF and simplex communications. The tower will feature a microwave antenna to perform SCADA operations.						
Hazards Mitigated: Earthquake, landslide, flooding, wildland fire, tsunami, severe weather						
New and Existing	2, 9	SRCSD	N/A	High	General Funds, SAFECOM	Short-term

Table 7-11. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
SRCSD-1	3	High	High	Yes	Yes	No	Medium	High
SRCSD-2	3	Low	Low	Yes	No	Yes	High	Low
SRCSD-3	3	High	Medium	Yes	Yes	No	Medium	High
SRCSD-4	3	Medium	High	No	Possibly	No	Low	High
SRCSD-5	3	Medium	Medium	Yes	Possibly	No	Low	Medium
SRCSD-6	3	Medium	Medium	Yes	Yes	No	Low	High
SRCSD-7	2	High	High	Yes	No	Possibly	Medium	Low
SRCSD-8	2	High	High	Yes	Yes	No	Low	High

a. See the introduction to this volume for explanation of priorities.

Table 7-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Earthquake		1, 4, 5, 6			3, 7, 8			2, 5
Landslide		1, 4, 6			3, 7, 8			2
Wildland Fire		1, 4			3, 7, 8			2
Severe weather		5			3, 7, 8			2, 5
Flooding		1, 5, 6			3, 7, 8			2, 5
Drought		5		5				2, 5
Tsunami		1, 6			3, 7, 8			2
Sea level rise		1					1	2
Dam failure	—	—	—	—	—	—	—	—

a. See the introduction to this volume for explanation of mitigation types.

7.10 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

7.10.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

7.10.2 Staff and Local Stakeholder Involvement in Annex Development

SRCSD has collaborated in providing information included in this hazard mitigation plan at various points in the process, through board meeting discussion and information gathering by staff. Most recently we contacted Big Rock and Klamath Community Services Districts to analyze comparisons of our individual needs to better understand vulnerabilities to respective community services districts in our local area. We reached out to county officials to attempt to understand their role as it relates to multi-jurisdictional hazard mitigation planning, helping the communication process and furthering accurate information. From December 2017 to April 2018 the general manager attended steering committee meetings to help form this hazard mitigation annex.

8. CRESCENT FIRE PROTECTION DISTRICT

8.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Bill Gillespie, Fire Chief
255 W. Washington Blvd
Crescent City, CA 95531
Telephone: 707-464-2421
e-mail Address: bgillespie@crescentcity.org

Alternate Point of Contact
Vanessa Duncan, Administrative Assistant
255 W. Washington Blvd
Crescent City, CA 95531
Telephone: 707-464-2421
e-mail Address: vduncan@crescentcity.org

8.2 JURISDICTION PROFILE

8.2.1 Overview

The Crescent Fire Protection District (District) is the largest fire district in Del Norte County serving directly or through automatic aid agreements 84 percent of the County's population base. The District is located on the extremely remote and rugged Northern California coastline just south of the California-Oregon border. The District surrounds the City of Crescent City on the North, East, and South boarders of the City. State Highway 101 passes through the District North and South, from milepost 30.8 to milepost 18.0, respectively. Approximately three miles of State Route 199 lies within the North-East corner of the District. Both highways are vital transportation routes serving the Crescent City area, all communities within Del Norte County, and additional communities north and south.

The District consists of one paid Fire Chief, one part-time Deputy Chief-Training Officer, one administrative assistant, and an all-volunteer fire suppression staff. The District participates in functional consolidation and complete auto-aid with the City of Crescent City under the organizational name of Crescent City Fire and Rescue. Automatic aid is provided by agreement to Hiouchi and Klamath Fire Departments for all full response incidents (fire, rescue, extrication), and automatic aid move up coverage at the jurisdiction boundaries for Smith River and Fort Dick Fire Departments. Crescent City Fire and Rescue participates in mutual aid by agreement with all fire agencies in Del Norte County. Crescent City Fire and Rescue responds to approximately 1,500 calls for service annually.

The District operates three fire stations within the fire protection district boundaries. The main station is located at 255 W. Washington Blvd, and houses response apparatus and the administrative offices. Additional stations are located at 550 E. Cooper Avenue and at 175 Humboldt Road, and house response apparatus. The City of Crescent City owns the fire station at 520 I Street, with that station used by Crescent City Fire and Rescue and housing response apparatus. Crescent City Fire and Rescue also provides personnel as needed at the fire station located at the Del Norte County Airport to augment crash rescue response services required for commercial flight service. Due to the rural nature of many areas of the District, adequate fire hydrant coverage is limited in many areas. This requires long fire flow supply line stretches and heavy reliance on water tenders to provide water to the fire scene.

The Crescent Fire Protection District Board is governed by a five-member Board of Directors, elected by the voters. The District was formed in 1949, and relies on property tax and two voter approved assessments for operational funding. The Board assumes responsibility for the adoption of this plan; Crescent City Fire and Rescue will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 4 and 8 in non-hydrant areas.

8.2.2 Service Area and Trends

The district serves a population of approximately 13,000. Its service area covers an area of 16,621 acres (26 square miles).

Services Provided: Fire Suppression, Rescue/Extrication, Hazardous Material Response, Emergency Medical Services (First Responder/Basic Life Support), building plan review, construction inspections, and Safety Inspections.

8.2.3 Assets

Table 8-1 summarizes the critical assets of the district and their value.

Table 8-1. Special Purpose District Assets

Asset	Value
Property	
3 acres of land	Unknown
Critical Infrastructure and Equipment	
5 Fire Engines	$3,000,000
3 Water Tenders	$800,000
5 Ems and Command Vehicles	$500,000
Total:	*$4,300,000*
Critical Facilities	
3 Fire Stations	$20,000,000
Total:	*$20,000,000*

8.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as Community Capacity Building mitigation actions in the Analysis of Mitigation Actions table in Section 10.9.

8.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 8-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

Table 8-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
California Building Code	2016	Adopted 2016
California Fire Code	2016	Adopted 2016
California Health and Safety Code		
National Fire Protection Association		
Del Norte County Fire Services Automatic Mutual Aid Agreement	2016	Adopted by all local government fire service agencies in Del Norte County.
ISO Fire Suppression Rating Schedule	11/2013	Rating 4/8
Del Norte County Regional Airport Emergency Plan	July, 2015	Approved by FAA August 3, 2015
Del Norte Operational Area Emergency Operations Plan	2005	

8.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 8-3. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 8-4.

Table 8-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Share of general property tax revenue	Yes

Table 8-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	None in house, Private consultants by contract.
Engineers or professionals trained in building or infrastructure construction practices	Yes	None in House, Private consultants by contract.
Planners or engineers with an understanding of natural hazards	Yes	None in House, Private consultants by contract
Staff with training in benefit/cost analysis	Yes	Fire Chief, Executive Secretary
Surveyors	Yes	None in house, Private consultants by contract
Personnel skilled or trained in GIS applications	Yes	None in house, Private consultants by contract
Scientist familiar with natural hazards in local area	Yes	Humboldt State University
Emergency manager	Yes	Fire Chief, Deputy Chief, Battalion Chiefs
Grant writers	Yes	Various In-House Personnel
Other	No	N/A

8.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 8-5.

Table 8-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	No N/A
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe	Yes Education and outreach via department Facebook page
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	No N/A
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	Yes Everbridge is used in the community for hazard notification. It uses any phone number entered by the person signing up to receive mass notifications.
Do you have any established warning systems for hazard events? • If yes, please briefly describe	Yes Everbridge, as described above.

8.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 8-6 summarizes the District's adaptive capacity for climate change.

Table 8-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: Impacts of flooding related to sea level rise are understood. Precipitation changes have a direct effect on drought and fire activity.	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: Department personnel monitor impacts to fuel moisture and fuel growth to aid in fire intensity and spread factors, as well as potential flood impacts.	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment: Ability to assess strategies for wildfires, sea level rise and flooding, public health and safety is present.	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Medium
Comment: Aside from California Air Resources Board requirements, more information is needed specific to developing an inventory.	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: Facility location based upon flooding, building construction requirements based upon wildfire, and public safety considered.	
Participation in regional groups addressing climate risks	Medium
Comment: Some participation in groups working on individual climate change impacts, such as wildfire, drought, sea level rise, etc.	

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: Board has authority to consider climate change impacts related to budget, facilities, apparatus, equipment purchase needs, and department can consider adjustments of operations based upon climate change.	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment: Greenhouse gas emissions mitigation has been a low priority to this point in the jurisdiction.	
Identified strategies for adaptation to impacts	Low
Comment: None provided	
Champions for climate action in local government departments	Low
Comment: Greenhouse gas emissions mitigation has been a low priority to this point in the jurisdiction.	
Political support for implementing climate change adaptation strategies	Low
Comment: Greenhouse gas emissions mitigation has been a low priority to this point in the jurisdiction.	
Financial resources devoted to climate change adaptation	Low
Comment: Greenhouse gas emissions mitigation has been a low priority to this point in the jurisdiction.	
Local authority over sectors likely to be negative impacted	Medium
Comment: None provided	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Medium
Comment: Climate change is not at the forefront of public discussion.	
Local residents support of adaptation efforts	Low
Comment: Climate change is not at the forefront of public discussion.	
Local residents' capacity to adapt to climate impacts	Medium
Comment: Climate change is not at the forefront of public discussion.	
Local economy current capacity to adapt to climate impacts	Low
Comment: All climate impacts identified for the planning area could severely impact the local economy.	
Local ecosystems capacity to adapt to climate impacts	Unsure
Comment: Unknown capacity	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

8.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

- **Participation in Del Norte County Emergency Operations Center**—District hosts emergency operations center location at Washington Street Station. Crescent City Fire & Rescue staff members representing the District participate in county emergency operations center planning and training regularly. Hazard mitigation topics and concerns on natural and climate change issues are integrated into emergency operations center training and response.

- **Participation in Del Norte County Regional Airport Emergency Plan**—District is a critical response partner for emergency situations at the regional airport. Crescent City Fire & Rescue personnel provide emergency response staff as well as routine crash rescue support for commercial flights.
- **Participation in the Del Norte Operational Area Emergency Operations Plan**—District is a component of the emergency operations center through Crescent City Fire & Rescue. Hazard mitigation topics affect and influence response and operations reflected in the emergency operations plan.
- **Del Norte County Fire Services Automatic Mutual Aid Agreement—**District participation in county automatic and mutual aid fire services agreement.

8.4.1 Opportunities for Future Integration

As this hazard mitigation plan is implemented, The Crescent Fire Protection District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Del Norte Operational Area Emergency Operations Plan—**This plan is scheduled to be rewritten in the near future at the County level, and this is the opportunity to utilize the hazard mitigation plan and supporting data developed through the various annexes, including the Crescent Fire Protection District annex, to address hazard areas, impacts from disasters and climate change.

8.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 8-7 lists past occurrences of natural hazards for which specific damage was recorded in Crescent Fire Protection District. Other hazard events that broadly affected the entire planning area, including Crescent Fire Protection District, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

8.6 HAZARD RISK RANKING

Table 8-8 presents a local ranking for Crescent Fire Protection District of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 8-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Severe Storm, Flooding, Wind	DR-4308	February 2017	$6,502,500 Countywide
Severe Storm, Flooding	N/A	December 2016	$9,260,000 Countywide
Severe Storm, Flooding, wind	N/A	10/13/2016	N/A
Tsunami	DR-1968	03/11/2011	N/A
Winter Storm, Flooding	N/A	12/28/2008	N/A
Winter Storm	N/A	1/4/2008	N/A
Earthquake	N/A	2/26/2007	N/A
Tsunami	N/A	1/13/2007	N/A
Tsunami	N/A	11/15/2006	N/A
Earthquake	N/A	7/16/2006	N/A
Earthquake	N/A	3/25/2006	N/A
Severe Storms, Flooding, Landslides	DR-1628	2/3/2006	$7,650,000 Countywide
Earthquake	N/A	6/14/2005	N/A
Earthquake	N/A	8/15/2003	N/A
Earthquake	N/A	6/17/2002	N/A
Earthquake	N/A	9/20/2001	N/A
Earthquake	N/A	1/13/2001	N/A
Earthquake	N/A	3/16/2000	N/A
El Nino Flood	DR-1203	2/9/1998	N/A
Severe Storm, Flooding	DR-1155	1/4/1997	$15,150,000 Countywide
Severe Winter Storm	N/A	12/9/1995	$8,400,000 Countywide
Severe Winter Storms	DR-1044	1/13/1995	N/A
Fishing Losses (El Nino Effect)	DR-1038	9/20/1994	30,300,000 Countywide
Tsunami	N/A	9/1/1994	N/A
Earthquake	DR-943	4/25/1992	$17,829,642 Countywide
Tsunami	N/A	4/25/1992	N/A
Tsunami	N/A	5/7/1986	N/A
Severe Storms, Flooding	DR-758	2/18/1986	N/A
Winter Storms	DR-677	2/9/1983	N/A
Tsunami	N/A	10/3/1974	N/A
Severe Storms, Flooding	DR-329	4/5/1972	$6,817,618 Countywide
Tsunami	N/A	7/26/1971	N/A
Tsunami	N/A	3/27/1964	N/A

Table 8-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake[a]	(2 x 18) = 36	High
2	Tsunami[i]	(3 x 10) = 30	High
3	Severe weather[b]	(3 x 9) = 27	Medium
4	Drought[f]	(3 x 3) = 9	Low
4	Landslide[e]	(3 x 3) = 9	Low
5	Flooding[d]	(2 x 4) = 8	Low
6	Dam failure[g]	(1 x 0) = 0	None
6	Sea level rise[h]	(2 x 0) = 0	None
6	Wildfire[c]	(3 x 0) = 0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on assets and low impact on operations.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Water-related industry increases rating.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

8.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Earthquake
  - District facilities are located on class D soil, which may be prone to liquefaction
  - Power disruptions can occur as a result of earthquakes
  - Response efforts may be hampered if fire facilities are damaged
  - Response efforts may be hampered as roads are blocked by building debris
- Tsunami
  - The Crescent Fire Protection District (CFPD) Engine Station is located in the tsunami inundation zone
  - Power disruptions can occur as a result of tsunamis
  - Response efforts may be hampered if fire facilities are damaged
  - Response efforts may be hampered as roads are blocked by water and debris
- Severe weather
  - Power disruption can occur as a result of severe weather events.
  - Response efforts may be hampered as roads are blocked by downed trees and powerlines.
- Landslide
  - Response efforts may be hampered as roads are blocked by landslide debris.
- Flooding
  - Response efforts may be hampered as roads are blocked by floodwaters

- Wildfire
  - Power disruptions can occur as a result of wildfire
  - Response efforts may be hampered as roads are blocked by fire and fire-damaged trees
  - Smoke can disrupt aircraft access to the event and to commercial air travel

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 10.9.

8.8 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 8-9 lists the actions that make up the Crescent Fire Protection District hazard mitigation action plan. Table 8-10 identifies the priority for each action. Table 8-11 summarizes the mitigation actions by hazard of concern and mitigation type.

8.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Better hazard mapping and demographics of unincorporated areas with associated cumulative damages and losses.

Table 8-9. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CFPD-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire						
Existing	3, 4, 10	CFPD		High	HMGP, PDM, FMA	Short-term
CFPD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 5, 8	Del Norte County	CFPD	Low	Staff Time, General Funds	Short-term
CFPD-3—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including Cooper and Bertsch stations.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 6, 9	CFPD		Medium	HMGP, PDM	Short-term
CFPD-4—**Continue to participate not only in general mutual-aid agreements, but also in agreements with adjoining jurisdictions for cooperative response to all hazards and disasters**						
Hazards Mitigated: Dam failure, Drought, Earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 6, 9	CFPD		Medium	Staff time, General Funds	Short-term
CFPD-5—Enhance Department Webpage and/or Facebook page to include more comprehensive disaster planning resources						
Hazards Mitigated: Drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	3, 4, 5, 8	CFPD		Low	Staff time, General Funds	Short-term
CFPD-6—Develop Disaster Operations Policies and Procedures						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New	2, 3, 4, 8, 9	CFPD		Low	Staff time, General Funds	Short-term
CFPD-7—Support the County-wide initiatives identified in Volume 1 of the hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	CFPD		Low	Staff time, General funds	Short-term

Table 8-10. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
CFPD-1	3	High	High	Yes	Yes	No	Medium	High
CFPD-2	3	Low	Low	Yes	No	Yes	High	Low
CFPD-3	3	High	Medium	Yes	Yes	No	Medium	High
CFPD-4	3	High	Medium	Yes	No	Yes	High	Low
CFPD-5	4	High	Low	Yes	No	Yes	High	Low
CFPD-6	5	Medium	Low	Yes	No	Yes	Medium	Low
CFPD-7	10	High	Medium	Yes	No	No	Medium	Low

a. See the introduction to this volume for explanation of priorities.

Table 8-11. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Earthquake	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Tsunami	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Severe weather	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Drought	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Flooding	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Dam failure	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Landslide	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Sea level rise	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7
Wildfire	CFPD-2, 7	CFPD-1	CFPD-5, 7		CFPD-3, 4			CFPD-6, 7

a. See the introduction to this volume for explanation of mitigation types.

8.10 ADDITIONAL COMMENTS

As previously stated, Crescent Fire Protection District has joined services operationally with Crescent City Fire Department to form Crescent City Fire & Rescue (CCFR). While CFPD exists as a legal entity, all programs and mitigations listed in this annex will be carried out through CCFR staff in conjunction with the District.

CCFR tracks property loss dollars only associated with fires. Even then, the losses are purely estimates by our personnel. We have no reliable means of estimating dollar losses associated with natural disasters within our jurisdiction other than previously established procedures from the county and state.

8.11 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

8.11.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Del Norte Operational Area Emergency Operations Plan—**The plan was used to look at existing disaster response practices and emergency operations center integration.
- **Del Norte County Fire Services Automatic Mutual Aid Agreement**
- **Del Norte County Regional Airport Emergency Plan**
- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

8.11.2 Staff and Local Stakeholder Involvement in Annex Development

Overall annex development was completed by staff of Crescent City Fire & Rescue, on behalf of the Crescent Fire Protection District. Various members of the organization were consulted for their knowledge of the organization, stations, equipment, and various natural hazard implications. Department members, other staff from the City of Crescent City and the County of Del Norte, as well as members of the community provided historic input on disaster history and impacts that have affected the District.

9. SMITH RIVER FIRE PROTECTION DISTRICT

9.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Geoff Antill, Projects Administrator
PO Box 187
Smith River, CA 95567
Telephone: 909-273-9525
e-mail Address: gantill@charter.net

Alternate Point of Contact
Elaine Fallgren, Board Member
PO Box 187
Smith River, CA 95567
Telephone: 707-487-5621
e-mail Address: smithriverfire9121@gmail.com

9.2 JURISDICTION PROFILE

9.2.1 Overview

The Smith River Fire Protection District (SRFPD) is a California Special District, organized to provide local fire protection, rescue, and emergency medical services in the area around Smith River and Hiouchi, California.

SRFPD was first organized in 1934 after a fire that nearly destroyed the town of Smith River. In 1956, the district was formally incorporated as the Smith River Volunteer Fire Department. In 1978, the district was reorganized as a special district and renamed the Smith River Fire Protection District. On April 21, 1983, the SRFPD adopted a resolution annexing Hiouchi, California into the District.

SRFPD is primarily funded by a portion of property tax collections, but also collects an annual fee per habitable structure. The district serves all residences, business, and wildland areas within its boundaries, as well as the many visitors to the area.

The district has just over 1,500 structures and about 2,600 residents. Population in the area trends up or down slightly with the local economy. About 27 percent of the population lives below the poverty level.

The small amount of new construction in the district is along the hillsides overlooking the ocean, and along the river in Hiouchi. These areas are considered urban-wildland interface areas. SRFPD participates in the Public Protection Class Rating and currently has a rating of 5/5Y.

SRFPD has four paid staff members: a fire chief, an assistant fire chief, a projects administrator, and a secretary. In addition, the district is staffed by approximately 25 volunteer firefighters. The department has either formal or informal reciprocal aid agreements with the Tolowa Dee Ni' Nation and with adjoining fire districts and other local, state and federal agencies.

The district operates two fire stations: the main hall in Smith River (Station One), and a station in Hiouchi (Station Two). The district responds to approximately 280 emergency calls per year. About three quarters of those calls are in the Station One first due area, and the remainder are within Station Two's area. About 70 percent of all calls are for medical assistance.

Due to the rural nature of the district, the availability of fire hydrants is limited to the township areas of Smith River and Hiouchi. A large portion of the district is supplied by well water, and firefighting is accomplished using water tenders. SRFPD is governed by a five-member elected Board of Directors, which assumes responsibility for the adoption of this plan and will oversee its implementation.

9.2.2 Service Area and Trends

The SRFPD service area roughly corresponds to the Smith River Planning Area and the Hiouchi Planning Area as identified in the hazard mitigation planning process. The district is bounded on the north by the Oregon state border, on the west by the Pacific Ocean, on the south by the Smith River, and on the east at about mile marker 8 on US Hwy 199. SRFPD is first due in a 59-square-mile area that includes the primary district boundaries (27 square miles), and a sphere of influence area (32 square miles). The district consists of rural residential and agricultural occupancies and areas of remote wildland.

The population of the district is 2,378 (City Data, 2018). The district roughly coincides with census tracts for Smith River and Hiouchi. Population figures for Smith River are as of 2016, and Hiouchi as of 2010.

The SRFPD owns the land on which the main fire station (Station One) in Smith River is located, an area of approximately 4,812 square feet. In Hiouchi, the district owns a wood frame building (Station Two) that is located on land leased from the US Park Service. The district also owns a 21,000-square-foot former grocery store sitting on about 2 acres of land. The grocery store property is intended to be developed into a new Station One. Finally, the district owns two residential lots (one with a structure) across the street from the current Station One, both of which are in the process of a sale.

The SRFPD is included in both the County of Del Norte General Plan and the Tolowa Dee Ni' Nation area plan. Both plans anticipate residential and visitor-serving commercial growth in the SRFPD service area. While such growth is not quantified, it is anticipated to increase the number of housing units within the service area, as well as increase commercial facilities, thus presenting a potential increase in the demand for fire protection services.

9.2.3 Assets

Table 9-1 summarizes the critical assets of the district and their value.

Table 9-1. Special Purpose District Assets

Asset	Value
Property	
11.5 acres of land	$5,750,000
Critical Infrastructure and Equipment	
1994 Pierce Pumper Truck (E-96)	$350,000
1996 Ford Tanker Truck (T-95)	$300,000
1995 GMC First Responder (R-92)	$65,000
1978 Kenworth Tanker Truck (T-93)	$300,000
2001 HME Pumper Truck (E-94)	$350,000
1997 Ford Light Rescue (R-97)	$250,000
2011 Ford Utility Truck (R-98)	$ 70,000
Pace American Tandem Axel Trailer & Equipment	$5,000
Airvac Exhaust Removal System (Station 1)	$25,000
Holmatra Extrication Equipment—Cutter	$4,806
Holmatra Extrication Equipment—Spreader	$5,917
Extrication Equipment—Air Pump	$8,605

Asset	Value
Holmatra Extrication Equipment—Hoses	$2,050
Extrication Equipment—Rescue Jack	$5,394
Extrication Equipment—Misc.	$10,314
First Responder Medical Rescue Equipment	$6,000
Autopulse – mechanical CPR	$25,000
Lucas 2 – mechanical CPR	$15,000
Water Rescue – underwater breathing gear	$11,000
Water Rescue – dry suits	$7,500
Office equipment	$20,000
Furniture and fixtures	$10,000
Personal Protective Equipment (PPE) - Structural	$44,000
Personal Protective Equipment (PPE) – Wildland	$25,000
Hoses, hose fittings, ladders, hand tools	$30,000
Gas monitors	$2,500
RIT packs	$5,000
Infrared cameras (2)	$6,000
SCBA Equipment	$41,010
Total:	*$2,000,096*
Critical Facilities[a]	
Smith River Fire Station, 245 N. Haight, Smith River	$180,000
Hiouchi Fire Station, 105 Dunklee Ln., Hiouchi	$ 80,000
Station 1 Project (store conversion), 301 N. Fred Haight Drive, Smith River	$400,000
Total:	*$660,000*

a. This list does not include the property indicated in Section 9.2.2 as for sale.

9.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as community-capacity-building mitigation actions in the analysis of mitigation actions table at the end of this annex.

9.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 9-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

9.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 9-3. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 9-4.

Table 9-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
County of Del Norte General Plan & Codes	2018	Unclear when the latest update was applied. Very likely that this is subject to some update every year. General Plan was last updated in 2011.
SRFPD Strategic Plan	2016	Identifies 42 actionable goals. The Strategic Plan identifies the new headquarters station project as a priority.
ISO Fire Suppression Rating Schedule for SRFPD	2016	Rating of 5/5Y
SRFPD Policy Statements	2017	Updated regularly. Policy manual due for re-write in 2018.
SRFPD Capital Reserve Policy	2017	Updated as necessary. This policy identifies several areas where reserves are necessary and sets targets for annual reserve additions. This policy covers apparatus (fire engines and tenders), capital building (new or expansion), self-contained breathing apparatus (SCBA) replacement, and personal protective equipment (PPE) replacement.

Table 9-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes
Share in General Property Tax Revenue	Yes

Table 9-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Provided through contract support.
Engineers or professionals trained in building or infrastructure construction practices	Yes	Provided through contract support.
Planners or engineers with an understanding of natural hazards	Yes	Provided through contract support.
Staff with training in benefit/cost analysis	Yes	Projects Administrator, part-time
Surveyors	Yes	Provided through contract support.
Personnel skilled or trained in GIS applications	Yes	Provided through contract support.
Scientist familiar with natural hazards in local area	Yes	Provided through contract support.
Emergency manager	Yes	Provided through contract support.
Grant writers	Yes	Projects Administrator, part-time

9.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 9-5.

Table 9-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes, PIO Elaine Fallgren
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? If yes, please briefly describe	No N/A
Do you utilize social media for hazard mitigation education and outreach? If yes, please briefly describe	No N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation? If yes, please briefly specify	Yes Fire Safe Council; Neighborhood Watch
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, please briefly describe	No N/A
Do you have any established warning systems for hazard events? If yes, please briefly describe	Yes Station siren

9.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 9-6 summarizes the District's adaptive capacity for climate change.

Table 9-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: Impacts of sea-level rise and flooding are well understood; impacts of temperature and precipitation changes along with their impacts on agricultural productivity would be well understood by agricultural community.	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: SRFPD would rely on State of California and County of Del Norte to provide monitoring of climate change impacts.	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment: Contract resources available should they be required.	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: The District does not currently have a greenhouse gas emissions inventory	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: Land-use policy is set by the County of Del Norte	
Participation in regional groups addressing climate risks	Low
Comment: None provided	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: Factored into strategic planning process/updates	
Identified strategies for greenhouse gas mitigation efforts	Low

Criterion	Jurisdiction Rating[a]
Comment: Greenhouse gas emissions are not significant in jurisdiction	
Identified strategies for adaptation to impacts	Low
Comment: None provided	
Champions for climate action in local government departments	Low
Comment: Climate change is not at the forefront of public discussion	
Political support for implementing climate change adaptation strategies	Low
Comment: Climate change is not at the forefront of public discussion	
Financial resources devoted to climate change adaptation	Low
Comment: Climate change is not at the forefront of public discussion	
Local authority over sectors likely to be negatively impacted	Medium
Comment: None provided	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Medium
Comment: Climate change is not at the forefront of public discussion	
Local residents support of adaptation efforts	Low
Comment: Climate change is not at the forefront of public discussion	
Local residents' capacity to adapt to climate impacts	Medium
Comment: Climate change is not at the forefront of public discussion	
Local economy current capacity to adapt to climate impacts	Low
Comment: Economy is not very diverse; anything affecting agriculture would present adaptation issues	
Local ecosystems capacity to adapt to climate impacts	Unsure
Comment: Unknown capacity	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

9.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

9.4.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, Smith River Fire Protection District made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **SRFPD Strategic Plan—**The district strategic plan recognizes and incorporates as mandates, the following planning documents (among others). These documents represent integration to the extent that hazard mitigation strategies are mandated by them:

  - Del Norte County Code (titles 12 and 14)
  - Del Norte Local Agency Formation Commission
  - Memorandum of Understanding – Tolowa Dee Ni' Nation

- California Uniform Fire Code
- California Health and Safety Code
- National Fire Protection Program
- Insurance Services Office (ISO)

- **Participation in Del Norte County Emergency Operations Center—**Multiple senior members of SRFPD participate in county Emergency Operations Center planning meetings on a regular basis. Participation is focused mostly on preparedness planning and inter-agency coordination issues. In addition, training is available to improve Emergency Operations Center operations in the event. Hazard and mitigation information from the hazard mitigation plan serves as the back-drop for Emergency Operations Center planning, training, and execution.
- **Continuity of Government—**SRFPD is participant and contributor to the county Continuity of Operations and Continuity of Government (COOP/COG) plan. The COOP/COG plan identifies resilient decision-making structures that will persist after a disaster. The COOP/COG plan would be used by all agencies interacting with the district, post-disaster. Hazard and mitigation information from the hazard mitigation plan serves as the back-drop for COOP/COG planning, training, and execution.

9.4.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, Smith River Fire Protection District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **SRFPD Strategic Plan**—This document will be updated with mitigation actions identified in the hazard mitigation plan.
- **SRFPD section of COOP/COG**—This document will be revised based on findings of the hazard mitigation plan.

9.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 9-7 lists past occurrences of natural hazards for which specific damage was recorded in Smith River Fire Protection District. Other hazard events that broadly affected the entire planning area, including Smith River Fire Protection District, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 9-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Severe Weather/Wind	N/A	4/7/2017	N/A
Severe Weather/Wind	N/A	2/20/2017	N/A
Severe Weather/Wind	N/A	2/5/2017	N/A
Severe Weather/Wind	N/A	1/22/2017	N/A
Severe Weather/Flash Flood	N/A	10/16/2016	N/A
Severe Weather/Wind	N/A	10/15/2016	N/A
Tsunami Waves	DR-1968	4/18/2011	N/A
Severe Weather/Wind	N/A	2/24/2008	N/A
Severe Weather/Snow, Sleet, Blizzard	N/A	1/5/2008	N/A

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Severe Weather/Wind	N/A	1/4/2008	N/A
Severe Weather/Wind	N/A	12/3/2007	N/A
Severe Weather/Wind	N/A	11/12/2006	N/A
Earthquake	N/A	7/16/2006	N/A
Earthquake	N/A	3/25/2006	N/A
Severe Storms/Landslides	DR-1628	2/3/2006	N/A
Severe Weather/Wind	N/A	1/1/2006	N/A
Severe Weather/Wind	N/A	12/30/2005	N/A
Earthquake	N/A	6/14/2005	N/A
Severe Weather/Wind	N/A	1/8/2005	N/A
Severe Weather/Lightning	N/A	1/7/2005	N/A
Severe Weather	N/A	12/15/2003	N/A
Severe Weather	N/A	9/17/2003	N/A
Earthquake	N/A	8/15/2003	N/A
Severe Weather/Lightning	N/A	5/30/2003	N/A
State Road Damage	N/A	1/1/2003	N/A
Severe Weather	N/A	12/15/2002	N/A
Severe Weather	N/A	11/7/2002	N/A
Biscuit Wildfire	N/A	07/13/2002	N/A
Earthquake	N/A	6/17/2002	N/A
Severe Weather	N/A	12/1/2001	N/A
Severe Storms	N/A	11/19/2001	N/A
Earthquake	N/A	9/20/2001	N/A
Earthquake	N/A	1/13/2001	N/A
Earthquake	N/A	3/16/2000	N/A
El Nino Floods	DR-1203	2/9/1998	N/A
Severe Storms/Flooding	DR-1155	1/4/1997	N/A
Severe Winter Storms	N/A	12/9/1995	N/A
Severe Winter Storms	DR-1044	1/13/1995	N/A
Earthquake	N/A	4/25/1992	N/A
Flood	N/A	11/22/1988	N/A
Wildland Fires	N/A	9/10/1987	N/A
Severe Storms/Flooding	DR-758	2/18/1986	N/A
Winter Storms	DR-677	2/9/1983	N/A
Severe Storms/Flooding	N/A	11/13/1981	N/A
Winter Storms	N/A	10/3/1974	N/A
Severe Storms/Flooding	DR-329	4/5/1972	N/A

9.6 HAZARD RISK RANKING

Table 9-8 presents a local ranking for Smith River Fire Protection District of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 9-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake[a]	(2 x 18) = 36	High
1	Wildland fire[c]	(3 x 12) = 36	High
2	Landslide[e]	(3 x 10) = 30	High
3	Severe weather[b]	(3 x 9) = 27	Medium
4	Flooding[d]	(2 x 6) = 12	Low
4	Tsunami[i]	(3 x 4) = 12	Low
5	Drought[f]	(3 x 3) = 9	Low
6	Sea level rise[h]	(2 x 3) = 6	Low
7	Dam failure[g]	(1 x 0) = 0	Low

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on assets and low impact on operations.
c. Based on Very High and High Fire Severity Zones. Water-related industry increases rating.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, no impact on assets and high impact on operations.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

9.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Earthquake
  - There is a risk of critical facility collapse, infrastructure damage, especially to older water pipes on which the SRFPD depends for firefighting capacity, and power disruption.
  - The district currently operates out of two fire stations; neither of which is compliant with critical facility codes and may be subject to damage as a result of earthquake. The district is currently assessing the feasibility of replacing its headquarters station with a building that can be brought up to critical facility standards.
- Wildland Fire
  - The SRFPD would be responsible for fighting wildfires within its service area and would likely be called upon to assist in fighting wildfires outside of its service area as a result of both formal and informal mutual aid agreements.
  - SRFPD is first due in a 59-square-mile area which is about half wildland area, and about a quarter wildland urban interface.

- Landslide
  - The primary impact of landslides is the need for the SRFPD to respond to calls for emergency assistance and evacuation of residents trapped or potentially trapped by landslides. Response efforts may be hampered if roads are blocked by landslide debris.
  - The landslide hazard is a likely secondary outcome of the Earthquake and Severe Weather (or both) hazards.
- Severe weather
  - Power disruption can occur as a result of severe weather events. Experience with power outages is that they can last 48 to 72 hours during severe weather.
  - Localized flooding is often an issue during severe winter weather, sometimes isolating neighborhoods.
  - Downed trees and power lines are common and often block major roads. In these cases, SRFPD is likely to be called upon for evacuation of isolated areas and traffic control on roads.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 10.9.

9.8 STATUS OF PREVIOUS PLAN ACTIONS

Table 9-9 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

9.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 9-10 lists the actions that make up the Smith River Fire Protection District (SRFPD) hazard mitigation action plan. Table 9-11 identifies the priority for each action. Table 9-12 summarizes the mitigation actions by hazard of concern and mitigation type.

9.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

More work needs to be done to understand the location of storage of potentially hazardous chemicals used in agriculture within hazard zones. The is especially important with regard to the flooding hazard.

9.11 ADDITIONAL COMMENTS

SRFPD is presently committed to a project to evaluate the feasibility of converting a former supermarket into a Station One headquarters building (mentioned in several places above) that will meet critical facilities standards. The district has purchased the property and is presently evaluating the structural work needed to effect a conversion to a fire station. If feasible, both structurally and financially, this project will remain a high priority for the district for several years.

Table 9-9. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
SRFD 1—Local power generation facilities. May include purchase of generators as well as study of feasibility of wind/solar generation facilities in the Smith River area in partnership with Smith River Community Services District.			X	SRFPD-1
Comment: SRFPD would like to include a standby generator in its new headquarters station, especially since this station could end up housing first responder's families during a disaster.				
SRFD 2—Seismic retrofit of fire halls and other improvements needed to provide emergency shelter facilities.			X	SRFPD-2
Comment: The new station project (Station 1) referenced earlier is being designed as an "Essential Facility" and is expected to comply with relevant building codes for fire stations greater than 10,000 square feet. This project is in the design phase at this time. Station 2 (Hiouchi) is a wood frame building of less than 10,000 square feet. Seismic retrofit may be appropriate if engineering recommends it.				
SRFD 3—Public Education			X	SRFPD-8
Comment: SRFPD does limited public education and has recognized in its Strategic Plan the need to do more outreach in the community on a variety of fire and safety topic.				
SRFD 4—Mapping of alternative evacuation routes and routes to reach fire sites and those stranded by hazards in partnership with Del Norte County, Smith River Community Services District and Big Rock Community Services District.	X			N/A
Comment: Inundation maps indicate routes that would likely be impacted. The lack of alternative routes under the most severe cases, indicates the need to plan for self-sufficiency and resilience within the community (see SRFPD 6, below).				
SRFD 5—Firefighter training in specialized techniques for wildfires and fires during drought conditions.	X			N/A
Comment: Training routinely includes wildland fire fighting skills.				
SRFD 6—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.			X	SRFPD-9
Comment: SRFPD is committed to the hazard mitigation planning process.				
SRFD 7—Support countywide initiatives identified in Volume 1.	X			N/A
Comment: SRFPD supported the countywide initiatives over the performance period of the 2010 plan and is committed to full participation in the updated countywide initiatives where appropriate.				

Table 9-10. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
SRFPD-1—Install power generation at critical facilities, including the new headquarters station. May include purchase of generators as well as study of feasibility of wind/solar generation facilities in the Smith River area in partnership with Smith River Community Services District.						
Hazards Mitigated: Earthquake, wildland fire, landslide, severe weather						
Existing	2, 4, 6, 9, 10	SRFPD	Smith River Community Services District	Medium	HMGP, PDM	Short-term
SRFPD-2—Where appropriate, support retrofitting, purchase or relocation of critical facilities located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard. SRFPD is presently evaluating the feasibility of relocating its Station One to a building that can be upgraded to critical facilities earthquake standards. SRFPD intends to evaluate its Station Two for retrofit to critical facility standards.						
Hazards Mitigated: Earthquake						
Existing	2, 4, 6, 9, 10	SRFPD	N/A	High	HMGP, PDM	Long-term
SRFPD-3—Enhance first-due wildland fire fighting capability. Acquire Type 3 fire-fighting apparatus and increase training of fire fighters. Increase coordination with other agencies in the region.						
Hazards Mitigated: Wildland fire						
New and Existing	3, 4, 6	SRFPD	N/A	Medium	SAFER, AFG	Medium-term
SRFPD-4—Map static water supplies greater than 2,000 gallons to support firefighting operations.						
Hazards Mitigated: Wildland fire						
New and Existing	3, 4, 6	SRFPD	N/A	Medium	Staff Time, General Funds	Short-term
SRFPD-5—Support alternative communication facilities at each fire station (ham radio room & antenna).						
Hazards Mitigated: Earthquake, wildland fire, landslide, severe weather						
New and Existing	2, 4, 6, 9	SRFPD	N/A	Medium	HSGP	Long-term
SRFPD-6—Develop response plans for events that isolate some or all of the district, especially critical bridge failure or landslide run-out. This will include pre-planning scenarios, siting supply caches, preparing housing displaced persons, and planning for stranded visitors.						
Hazards Mitigated: Earthquake, wildland fire, landslide, severe weather						
New and Existing	3, 4, 6, 8, 9	Del Norte County	SRFPD	Medium	Staff Time, General Funds	Short-term
SRFPD-7—Develop record keeping that identifies major events, damage, and resources.						
Hazards Mitigated: Earthquake, wildland fire, landslide, severe weather						
New and Existing	3, 4, 5, 6, 8, 9	SRFPD	N/A	Low	Staff Time, General Funds	Short-term
SRFPD-8—Public Education. Conduct public outreach to inform the public of hazards, mitigations, and response. Promote and support 72-hour self-sufficiency and defensible space and emergency access measures.						
Hazards Mitigated: Earthquake, wildland fire, landslide, severe weather						
Existing	3, 5, 8	SRFPD	TDN, Del Norte County OES	Low	HMGP 5% Initiative	Short-term
SRFPD-9—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 2, 4, 5, 6, 8, 9	Del Norte County OES	SRFPD	Low	Staff Time, General Funds	Short-term
SRFPD-10—Support and participate in county-wide Continuity of Operations and Continuity of Government planning and initiatives.						
Hazards Mitigated: Earthquake, wildland fire, landslide, severe weather						
New and Existing	1, 2, 4, 5, 6, 8, 9	Del Norte County OES	SRFPD	Low	Staff Time, General Funds	Short-term
SRFPD-11 – Training of firefighters for structural collapse and landslide response. This mitigation will result in a more qualified response when time is of the essence and additional resources are hours away.						
Hazards Mitigated: Earthquake, landslide						
New and Existing	3, 4, 6, 9	SRFPD	DNCo OES	Low	SAFR, AFG	Short-term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
SRFPD-12 – Training of firefighters for trench rescue (landslide). This mitigation will result in a more qualified response when time is of the essence and additional resources are hours away. *Hazards Mitigated:* Landslide						
New and Existing	3, 4, 6, 9	SRFPD	DNCo OES	Low	SAFR, AFG	Short-term
SRFPD-13 – Training of firefighters and officers in damage assessment. This mitigation will support regional, state-wide and federal response efforts by providing reliable information during hazard events. *Hazards Mitigated:* Earthquake, wild land fire, landslide, severe weather						
New and Existing	3, 4, 6, 9	SRFPD	DNCo OES	Low	SAFR, AFG	Short-term
SRFPD-14 – Develop local facilities for storage and distribution of emergency supplies. This mitigation addresses the geographic isolation of the district during hazard events. *Hazards Mitigated:* Earthquake, wild land fire, landslide, severe weather						
New and Existing	3, 4, 6, 9	DNCo OES	SRFPD	Medium	HGSP	Short-term

Table 9-11. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
SRFPD-1	5	High	Low	Yes	Yes	No	Medium	High
SRFPD-2	5	High	High	Yes	Yes	No	High[b]	High
SRFPD-3	3	High	High	Yes	Yes	No	Medium	High
SRFPD-4	3	High	Low	Yes	No	Yes	Medium	Low
SRFPD-5	4	High	Low	Yes	Yes	No	Medium	High
SRFPD-6	5	High	Low	Yes	No	Yes	Medium	Low
SRFPD-7	6	High	Low	Yes	No	Yes	Medium	Low
SRFPD-8	3	High	Low	Yes	Yes	No	Medium	High
SRFPD-9	7	High	Low	Yes	No	Yes	High	Low
SRFPD-10	7	High	Low	Yes	No	Yes	High	Low
SRFPD-11	4	High	Low	Yes	Yes	No	Medium	High
SRFPD-12	4	High	Low	Yes	Yes	No	Medium	High
SRFPD-13	4	High	Low	Yes	Yes	No	Medium	High
SRFPD-14	4	High	Medium	Yes	Yes	No	Medium	High

a. See the introduction to this volume for explanation of priorities.
b. See Section 9.11 for additional information.

Table 9-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Earthquake	SRFPD-2, SRFPD-8	SRFPD-2, SRFPD-8	SRFPD-8		SRFPD-1, SRFPD-6, SRFPD-7, SRFPD-5, SRFPD-11, SRFPD-13, SRFPD-14	SRFPD-2		SRFPD-8, SRFPD-9, SRFPD-10, SRFPD-14
Wildland fire	SRFPD-8	SRFPD-8, SRFPD-3, SRFPD-4	SRFPD-8		SRFPD-1, SRFPD-7, SRFPD-3, SRFPD-4, SRFPD-5, SRFPD-13, SRFPD-14			SRFPD-8, SRFPD-9, SRFPD-10, SRFPD-14
Landslide	SRPFD-8	SRPFD-8	SRFPD-8		SRFPD-1, SRFPD-6, SRFPD-7, SRFPD-5, SRFPD-11, SRFPD12, SRFPD13, SRFPD14			SRFPD-8, SRFPD-9, SRFPD-10, SRFPD-14
Severe weather	SRFPD-8	SRFPD-8	SRFPD-8		SRFPD-1, SRFPD-6, SRFPD-7, SRFPD-5, SRFPD-13, SRFPD14			SRFPD-8, SRFPD-9, SRFPD-10, SRFPD-14
Flooding								SRFPD-9, SRFPD-10, SRFPD-14
Tsunami								SRFPD-9, SRFPD-10, SRFPD-14
Drought								SRFPD-9, SRFPD-10
Sea level rise								SRFPD-9, SRFPD-10
Dam failure								SRFPD-9, SRFPD-10

a. See the introduction to this volume for explanation of mitigation types.

9.12 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

9.12.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.
- **City Data Website—**Reviewed to determine population figures for Smith River and Hiouchi (http://www.city-data.com/zips/95567.html and http://www.city-data.com/city/Hiouchi-California.html)

9.12.2 Staff and Local Stakeholder Involvement in Annex Development

- **Staff—**This annex was prepared primarily by two staff members, Geoffrey Antill and Elaine Fallgren. Antill is the Projects Administrator and Grant Writer for the district, while Fallgren serves as member of the board of directors and is the chairperson of that body.
- **Local Stakeholders**—The SRFPD board of directors meets on a monthly basis in public meetings. The topic of the hazard mitigation plan is identified on the agenda each month. The district Project Administrator reports on progress of the hazard mitigation plan annex project at each meeting and responds to any questions from the board or the public.
- **Local Stakeholders**—Survey results, referenced elsewhere in this document, include responses identified with Smith River and Hiouchi areas.

10. CRESCENT CITY HARBOR DISTRICT

10.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Charlie Helms, CEO / Harbormaster
101 Citizens Dock Road
Crescent City, CA 95531
Telephone: 707-464-6174 ext. 7
e-mail Address: charlie@ccharbor.com

Alternate Point of Contact
Lane Tavasci, Deputy Harbormaster
101 Citizens Dock Road
Crescent City, CA 95531
Telephone: 707-464-6174 ext. 6
e-mail Address: lane@ccharbor.com

10.2 JURISDICTION PROFILE

10.2.1 Overview

The Crescent City Harbor District (CCHD) is on the northern California coast adjacent to Crescent City, approximately 20 miles south of the Oregon border. Crescent City Harbor is located in Crescent Bay, just south of town, on lands granted to the Harbor District by the State Lands Commission and lands owned by the District in fee and title. The Harbor is protected by a 4,100-foot outer breakwater, a 12,000-foot inner breakwater, and a 2,400-foot sand barrier, which combine to create the only "harbor of refuge" between Humboldt and Coos Bay. The Harbor is a shallow-draft critical harbor of refuge, supporting a Coast Guard cutter, a Coast Guard Auxiliary search and rescue station, commercial and sport fishing, and recreational boating.

The CCHD was formed in 1931 by the California legislature to assume responsibility for improvements, maintenance, and management of the Crescent City Marina and related harbor facilities. The CCHD owns and controls land and tideland properties at Crescent Bay, bounded by Crescent City to the west, Crescent Beach to the east, the Highway 101 corridor to the north, and Whaler's Island and the breakwater to the south. The District owns roughly 150 acres of land. Day-to-day operations are managed by the CEO/Harbormaster and a staff of 12 full and part-time employees.

The Harbor District supports commercial fishing activities, which play a vital role in the Del Norte County economy. The Crescent City Harbor serves as a commercial boat basin for salmon, shrimp, tuna, cod, and Dungeness crab fishing vessels, as well as a basin for recreational watercraft. The Harbor is also home to multiple fishing and non-fishing related businesses and the Harbor District office. The District is governed by a five-member elected Board of Commissioners, which assumes responsibility for the adoption of this plan and will oversee its implementation.

10.2.2 Service Area and Trends

According to the California State Department of Finance, Demographic Research Unit, the estimated population of Del Norte County for 2016 is 24,888. The Crescent City Harbor District serves the entire County of Del Norte, which encompasses approximately 1,008 square miles.

Crescent City and Del Norte County are in a state of transition from resource production to a tourism and recreational services-based economy. The CCHD Harbor Master Plan, updated in 2006, emphasizes the District's intention to retain and improve existing harbor facilities in support of commercial fishing and recreational boating, while expanding coastal related visitor serving uses in the Harbor. These new uses have the potential of generating the revenue necessary to keep the CCHD economically viable, sustaining its ability to meet its mandates under the State Tidelands Grant and the California Coastal Act.

The Tidelands Grant to the Harbor District by the state of California mandates specific functions that the District must guarantee for public use including the development of a public harbor to meet the needs of the people of the State and the provision of recreational and visitor-serving uses within the granted lands.

Furthermore, the California Coastal Act emphasizes support for coastal-dependent uses (i.e., uses that must have a waterfront site in order to exist), and coastal related, visitor-serving, recreation, and commercial uses. Harbor District policies and programs that carry out the administrative mandates of the State are encompassed in the Crescent City Harbor District Harbor Master Plan, the Del Norte County Local Coastal Program, and the Crescent City Local Coastal Plan for the Harbor Dependent and Harbor Related planning areas.

As the level of activity increases, the Harbor's finite land and water areas will experience higher use levels. The Crescent City Harbor Master Plan is intended to effectively plan for a higher level of Harbor activity, without exceeding the Harbor's carrying capacity, or the amount of use the Harbor can sustain without adversely affective the qualities of the area.

Projects planned for in the CCHD Harbor Master Plan include public facility improvements, new hotels, restaurants and retail shops, pedestrian and trail improvements, among others. Such projects are intended to accommodate an increase in recreational, commercial, and visitor usage in a manner that provides for a variety of interests and activities without exceeding the Harbor's carrying capacity.

10.2.3 Assets

Table 10-1 summarizes the critical assets of the district and their value.

Table 10-1. Special Purpose District Assets	
Asset	Value
Property	
35 acres of land	$0 (Not assessed, property exempt)
Critical Infrastructure and Equipment	
Travel-lift	$120,000
Mobile Crane	$112,000
Dump Truck	$4,000
Backhoe	$54,500
40 Ft. Hull – Texas Steel Dredge	$209,090
36 Ft. ML1 Landing Craft	$11,500
20 Ft. McKee Fiberglass Skiff w/motor	$7,210
16 Ft. Steel Skiff w/motor	$3,550
Pickup and Stake Body Trucks (7)	$65,500
Fork Lifts (3)	$67,500
Computer Equipment	$68,000
Total:	*$722,850*
Critical Facilities	
Citizen's Dock	$8,400,000
Synchrolift and Dock	$1,850,000
Administrative Dock and Pump-out Station	$889,000
Inner Boat Basin Docks	$30,000,000
Maintenance/Storage Buildings (5)	$542,588
Shipyard Building	$695,250
Seafood Processing Plants (2)	$1,405,609
Office/Retail Buildings (13)	$1,630,421
Restroom Buildings (5)	$889,009
Wastewater Treatment Plant (for seafood waste processing)	N/A.
Total:	*$46,301,877*

10.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as community-capacity-building mitigation actions in the analysis of mitigation actions table at the end of this annex.

10.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 10-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

Table 10-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
Endangered Species Act	2012	For permitting Harbor reconstruction and related dredging activities
U.S. Army Corps of Engineers Regulations	2018	Working with Corps of Engineers on 10 Year Dredge Permit and Dredged Materials Management Plan
California Environmental Quality Act	2012	For permitting Harbor reconstruction and related dredging activities
California Coastal Commission	2016	For permitting fender piles
Del Norte County Code	2017	For that portion of the CCHD located in the unincorporated area of the County
Crescent City Municipal Code	2017	For that portion of the CCHD located within the City limits
Del Norte Operational Area Emergency Operations Plan	2018	Working on plan update for submittal
CCHD Harbor Master Plan	2006	Master Plan approved by Board of Harbor Commissioners in 2006
CCHD Information Technology Disaster Recovery Plan	2015	Harbor District worked with Technical Service contracted provider to develop Recovery Plan
CCHD Bomb Threat and Active Shooter Plan	2016	Developed plan in concert with Del Norte County Emergency Management group

10.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 10-3. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 10-4.

Table 10-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes
Other	Yes; grants from private, corporate and state foundations

Table 10-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	CCHD contracts with Stover Engineering a local civil engineering firm
Engineers or professionals trained in building or infrastructure construction practices	Yes	CCHD contracts with Stover Engineering a local civil engineering firm
Planners or engineers with an understanding of natural hazards	Yes	CCHD contracts with local civil engineering firm and also with local environmental assessment organization
Staff with training in benefit/cost analysis	Yes	CCHD contracts with a CPA firm for theses analyses
Surveyors	Yes	CCHD contracts with Stover Engineering, a local civil engineering firm for these services
Personnel skilled or trained in GIS applications	Yes	CCHD contracts with Del Norte County or Stover Engineering, a local engineering company for these services
Scientist familiar with natural hazards in local area	No	CCHD would have to contract with a consultant or Humboldt State University for these services
Emergency manager	Yes	The Harbormaster and Deputy Harbormaster share these duties
Grant writers	No	CCHD has to contract for these services with private organizations or providers
Other	No	N/A

10.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 10-5.

Table 10-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	No; The Harbormaster is assigned these PIO duties
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	No; This section is currently under development N/A
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe	No; In case of emergency CCHD would share evacuation information and links to the Prepare Del Norte website N/A
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	Yes The elected CCHD Harbor Commissioners address hazard mitigation issues at certain regularly scheduled meetings
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	No N/A
Do you have any established warning systems for hazard events? • If yes, please briefly describe	Yes CCHD participates in Del Norte County's Everbridge community warning system

10.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 10-6 summarizes the District's adaptive capacity for climate change.

Table 10-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: None provided	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: None provided	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: None provided	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: None provided	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: None provided	
Participation in regional groups addressing climate risks	Medium
Comment: Members of the Redwood Coast Tsunami Work Group and the Earthquake Country Alliance	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: None provided	
Identified strategies for greenhouse gas mitigation efforts	Medium
Comment: CCHD has approved a Power Purchase agreement for solar energy to supply approx. 90% of the Harbor District's usage; CCHD has purchased electric vehicle for Maintenance Team usage	
Identified strategies for adaptation to impacts	Medium
Comment: None provided	
Champions for climate action in local government departments	Low
Comment: None provided	
Political support for implementing climate change adaptation strategies	Medium
Comment: None provided	
Financial resources devoted to climate change adaptation	Medium
Comment: None provided	
Local authority over sectors likely to be negative impacted	High
Comment: None provided	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	Low
Comment: None provided	
Local residents support of adaptation efforts	Low
Comment: None provided	
Local residents' capacity to adapt to climate impacts	Medium
Comment: None provided	
Local economy current capacity to adapt to climate impacts	Low
Comment: None provided	
Local ecosystems capacity to adapt to climate impacts	Medium
Comment: None provided	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

10.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

10.4.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, the Crescent City Harbor District has made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **CCHD Personnel Evacuation Plan**—This plan incorporates the most recent information about safe areas where staff can gather to insure their personal safety. The evacuation plan was made in cooperation with Del Norte County Emergency Management personnel.
- **CCHD Critical Equipment Evacuation Plan**—The plan was made in consultation with local emergency personnel and CCHD staff to determine where heavy equipment can be placed safely in case of an earthquake, tsunami or flooding situation and in consideration of personnel safety. The plan was developed in response to the highest-ranking hazard, tsunami, facing the Crescent City Harbor District.

10.4.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, the Crescent City Harbor District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Sea Level Rise Impacts on the Crescent City Harbor District**—Work in conjunction with environmental scientist and/or engineer to prepare for sea level rise impacts. Upon the next update of the Master Plan, integrate sea level rise impacts and other updated information on hazard risk identified in the hazard mitigation plan.
- **Annual Update of Progress**—Annually update the Crescent City Harbor District Board of Commissioners on the status of actions identified in the hazard mitigation plan.

10.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 10-7 lists past occurrences of natural hazards for which specific damage was recorded in Crescent City Harbor District. Other hazard events that broadly affected the entire planning area, including Crescent City Harbor District, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 10-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Severe Winter Storm	N/A	03/01/2017	$140,000
Severe Winter Storm	N/A	02/21/2017	$95,000
Severe Winter Storm	N/A	01/23/2017	$110,000
Sever Winter Storm	N/A	12/09/2016	$135,000
Severe Winter Storm	N/A	12/11 – 14/2015	$166,000
Tsunami	DR-1968	03/ 11/ 2011	$24,735,332.00
Severe Winter Storms	N/A	1/1/2008	$150,000
Tsunami	N/A	11/15/2006	$28,222,299.00
Severe Storms	DR-1628	2/3/2006	$3,000,000
El Nino Floods	DR-1203	2/9/1998	Estimate not available
Fishing Losses (El Nino Effect)	DR-1038	9/20/1994	Estimate not available

10.6 HAZARD RISK RANKING

Table 10-8 presents a local ranking for Crescent City Harbor District of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 10-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Tsunami[i]	(3 x 18) = 54	High
2	Earthquake[a]	(2 x 18) = 36	High
3	Severe weather[b]	(3 x 9) = 27	Medium
4	Sea level rise[h]	(2 x 10) = 20	Medium
5	Flooding[d]	(2 x 9) = 18	Medium
6	Dam failure[g]	(1 x 0) = 0	None
6	Landslide[e]	(3 x 0) = 0	None
6	Wildland fire[c]	(3 x 0) = 0	None
6	Drought[f]	(3 x 0) =0	None

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on assets and low impact on operations.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

10.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Severe weather
  - Power disruption can occur as a result of severe weather events.
- Sea level rise
  - Sea level rise could significantly impact operations if adaptation measures are not taken.
- Tsunami
  - A tsunami would have the potential to cause significant damage to District facilities and operations. Visitors may not be aware of appropriate response in the event of a tsunami warning.
- Flooding
  - Flood debris flowing down Elk Creek can block Marina entrance and pollutants in flood waters can jeopardize the health of marine mammals and fish stocks

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 10.9.

10.8 STATUS OF PREVIOUS PLAN ACTIONS

Table 10-9 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

10.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 10-10 lists the actions that make up the Crescent City Harbor District hazard mitigation action plan. Table 10-11 identifies the priority for each action. Table 10-12 summarizes the mitigation actions by hazard of concern and mitigation type.

10.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Harbor District needs greater understanding of potential sea level rise impacts and mitigation efforts to assure continued operation of the Harbor for commercial and recreational users. Contracting for a detailed engineering study will be required.

10.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

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Table 10-9. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
HD-1—Support countywide initiatives identified in Volume 1.	X			N/A
Comment: CCHD supported the county-wide initiatives identified in the 2010 mitigation plan and will continue to support the updated initiatives over the performance period of the 2018 plan.				
HD-2—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.			X	CCHD-2
Comment: CCHD will continue to support the implementation of this plan throughout its performance period				
HD-3—Work with County Office of Emergency Services to develop tsunami inundation mapping that will accurately reflect the risk associated with tsunamis and support the Harbor District's tsunami risk reduction efforts.	X			N/A
Comment: Worked with CA. Department of Conservation, CA Geological Survey to develop inundation mapping				
HD-4—Post a link to the Hazard Mitigation Plan as well as other pertinent information all phases of emergency management on the District website.			X	CCHD-14
Comment: The Harbor District has recently contracted with a website management service and this action will be accomplished in the updated plan period				
HD-5—Nonstructural seismic retrofit of vulnerable district facilities			X	CCHD-5
Comment: Because of the focus on the reconstruction of the Harbor following the 2011 Tsunami, there was no funding or staffing available to accomplish this during the period. This will be addressed during this plan period				
HD-6—Rebuild inner basin seawall to strengthen and increase height	X			N/A
Comment: Completed as part of rebuild from 2006 Tsunami; total project cost $28,222,299				
HD-7 – Rebuild inner boat basin dock system	X			N/A
Comment: Completed 2014 funded through FEMA DR 1968 $24,735,332				
HD-8 – Develop Tsunami Evacuation Route/Trail for Harbor Area	X			N/A
Comment: Completed as part of the Coastal Trail extension and Harbor Promenade project; funded by Coastal Conservancy $2,409,185.91 total project				

Table 10-10. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CCHD-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.						
Hazards Mitigated: Earthquake, flooding, tsunami						
Existing	3, 4, 10	CCHD	N/A	High	HMGP, PDM, FMA	Short-term
CCHD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: Earthquake, flooding, severe weather, tsunami						
New and Existing	1, 5, 8	Del Norte County	CCHD	Low	Staff Time, General Funds	Short-term
CCHD-3—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including Harbor Maintenance Shop, Harbor Office, Harbor owned/operated Redwood RV Park.						
Hazards Mitigated: Earthquake, flooding, severe weather, tsunami						
Existing	2, 6, 9	CCHD	N/A	Medium	HMGP, PDM	Short-term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CCHD-4—Structural Retrofitting of Existing Buildings: Harbor District Office, 101 Citizens Dock Road; Harbor Maintenance buildings, Raker Road and Starfish Way; 201 Citizens Dock Road structure; Fashion Blacksmith building, 121 Starfish Way; Alber Seafood, 161 Starfish Way; Coast Redwood Art Gallery, 140 Marine Way; Crescent Seafood, 170 Marine Way; U.S. Coast Guard Auxiliary, 150 Marine Way; Crescent City Crab Shack, 160 Anchor Way; Kim's Hair, 170 Anchor Way; MM Diving, 245 Anchor Way; North Coast Ocean Sports & Grill; 110 Anchor Way; Pacific Choice Ice Plant, end of Lumber wing, Citizens Dock; Pacific Choice Seafood, 151 Starfish Way; 730 Highway 101 South structures; Redwood Harbor Village facilities, Starfish and Anchor Ways; Del Norte County Sheriff facility, 250 Citizens Dock Road; Chart Room Retail building, 128 Anchor Way; Chart Room Restaurant, 130 Anchor Way; 105 Citizens Dock facility; 160 Marine Way facility.						
Hazards Mitigated: Earthquake						
Existing	3,4,8,10	CCHD	Stover Engineering	High	HMGP, PDM	Long-term
CCHD-5—Nonstructural retrofitting of Existing Buildings and Facilities; Crescent Harbor Art Gallery external stairway						
Hazards Mitigated: Earthquake						
Existing	3,4,8,10	CCHD	Stover Engineering	Medium	HMGP, PDM	Short-term
CCHD-6—Develop and implement a program to capture perishable data after significant events to support future mitigations efforts including the implementation and maintenance of the hazard mitigation plan						
Hazards Mitigated: Earthquake, flooding, sea level rise, severe weather, tsunami						
New and Existing	2, 6,9	CCHD	Tech Wild	Medium	General Funds	Short-term
CCHD-7—Replace damaged fender piles and support piles on Harbor District wharves: Citizens Dock; Alber Seafood Dock; Wild Planet Dock; Pacific Seafood Dock; Travelift Dock; Fashion Blacksmith dock; Public Hoist Dock.						
Hazards Mitigated: Tsunami, earthquake, sea level rise, severe weather						
Existing	3,4,6,10	CCHD	PND Engineers	Medium	HMGP, PDM, FMA	Short-term
CCHD-8—Green Infrastructure, Solar and Wind Power Alternatives: Develop alternative sources of energy to get Harbor District functioning quickly after a disaster without having to wait for county-wide power grid to become operational after a natural disaster						
Hazards Mitigated: Tsunami, earthquake, severe weather						
New	1,2,3,6	CCHD	American	High	HMGP, PDM, FMA	Long-term
CCHD-9—Develop a post-disaster recovery plan and a debris management plan						
Hazards Mitigated: Tsunami, earthquake, severe weather, sea level rise, flooding						
Existing	1,6	CCHD	Del Norte County Emergency Mgmt.	Medium	HMGP, PDM	Short-term
CCHD-10—Integrate the hazard mitigation plan into other plans, ordinances and programs within CCHD including the Master Plan						
Hazards Mitigated: Tsunami, severe weather, earthquake, sea level rise, flooding						
New and Existing	1,3,4,9	CCHD	Harbor Counsel Black & Rice	Low	Staff Time, General Funds	Short-term
CCHD-11—Develop Sea-Level Rise Mitigation Plans and Structure Elevation program						
Hazards Mitigated: Flooding, sea level rise						
Existing	1,3,4,6	CCHD	PND Engineers	Medium	HMGP, PDM, FMA	Short-term
CCHD-12—Repair areas of seawall where armor-stone has slipped into harbor compromising the integrity of the wall						
Hazards Mitigated: Tsunami, flooding, severe weather, sea level rise						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PDM	Short-term
CCHD-13—Replace and elevate steel seawall that supports Citizens Dock, the Harbor District Office, the Public Hoist and the Seafood freezers						
Hazards Mitigated: Tsunami, severe weather, sea level rise, flooding						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PDM, FMA	Long-term
CCHD-14—Post a link to the Hazard Mitigation Plan as well as other pertinent information all phases of emergency management on the District website.						
Hazards Mitigated: Tsunami, earthquake, severe weather, sea level rise, flooding						
New and Existing	5, 9	CCHD	N/A	Low	General Funds	Short-term
CCHD-15—Replace and elevate Travelift Dock						
Hazards Mitigated: Tsunami, severe weather, sea level rise, flooding						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PMD, FMA	Medium-term

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CCHD-16—Repair, retrofit Concrete Seawall and Supports from Old Launch ramp to Crab Shack						
Hazards Mitigated: Tsunami, severe weather, sea level rise, flooding						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PMD, FMA	Long-term
CCHD-17—Repair, retrofit elevate Sea wall structure from Crab Shack to USCG facility						
Hazards Mitigated: Tsunami, severe weather, sea level rise, flooding						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PMD, FMA	Long-term
CCHD-18—Repair, retrofit elevate seawall along Ocean side of Anchor Way						
Hazards Mitigated: Tsunami, severe weather, sea level rise, flooding						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PMD, FMA	Long-term
CCHD-19—Repair, elevate Whaler Island Groin Seawall						
Hazards Mitigated: Tsunami, severe weather, sea level rise, flooding						
Existing	3,4,6,10	CCHD	PND Engineers	High	HMGP, PMD, FMA	Long-term

Table 10-11. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
CCHD-1	3	High	High	Yes	Yes	No	Medium	High
CCHD-2	3	Low	Low	Yes	No	Yes	High	Low
CCHD-3	3	High	Medium	Yes	Yes	No	Medium	High
CCHD-4	4	High	High	Yes	Yes	No	Medium	Medium
CCHD-5	4	Medium	Medium	Yes	Yes	No	Medium	Medium
CCHD-6	3	High	Medium	Yes	No	Possibly	Medium	Low
CCHD-7	4	High	High	Yes	Yes	No	High[b]	High
CCHD-8	4	High	High	Yes	Yes	No	Medium	Medium
CCHD-9	2	High	Medium	Yes	Yes	No	Medium	High
CCHD-10	4	Medium	Low	Yes	No	Yes	Medium	Low
CCHD-11	4	High	High	Yes	Yes	No	Medium	Medium
CCHD-12	4	High	High	Yes	Yes	No	High[b]	High
CCHD-13	4	High	High	Yes	Yes	No	High[b]	High
CCHD-14	2	Low	Low	Yes	No	Yes	High	Low
CCHD-15	4	High	High	Yes	Yes	No	Medium	High
CCHD-16	4	High	High	Yes	Yes	No	Medium	High
CCHD-17	4	High	High	Yes	Yes	No	Medium	High
CCHD-18	4	High	High	Yes	Yes	No	Medium	High
CCHD-19	4	High	High	Yes	Yes	No	Medium	high

a. See the introduction to this volume for explanation of priorities.
b. This action has been identified as a high priority for implementation even though funding is not yet secured.

Table 10-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Tsunami	10	1, 7,15,16,17, 18, 19	14		3, 8	12, 15,16,17,18, 19	8	2, 9
Earthquake	10	1, 4, 5, 7	14		3, 8		8	2, 6,9
Severe weather	10	7,15,16,17,18,19	14		3, 8	12, 13,15,16,17, 18,19	8	2, 6, 9
Sea level rise	10, 11	7, 11,15,16,17, 18,19	14			12, 13,15,16,17, 18,19	11	2, 6, 9, 11
Flooding	10	1,15,16,17,18,19	14		3	12, 13,15,16,17, 18,19		2, 6, 9
Dam failure	—	—	—	—	—	—	—	—
Landslide	—	—	—	—	—	—	—	—
Wildfire	—	—	—	—	—	—	—	—
Drought	—	—	—	—	—	—	—	—

a. See the introduction to this volume for explanation of mitigation types.

10.12 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

10.12.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.
- **Ben C. Gerwick Engineering study and predictive modeling for tsunami flow in Inner Boat Basin of the Crescent City Harbor**—Used to aid in the identification of mitigation actions.

10.12.2 Staff and Local Stakeholder Involvement in Annex Development

The Crescent City Harbor District Annex was developed with input from a variety of sources. Harbor Staff and elected Harbor Commissioners reviewed the 2010 Plan and shared events and situations that had arisen since the development of that plan. The update to the annex was discussed at public meetings held in the Harbor District meeting room. The Redwood Coast Tsunami Work Group looked at available data and projections to enhance the update to the annex. The updated California Geological Service Inundation maps were analyzed and discussed and the findings were incorporated into this annex. Once the draft annex had been completed, it was circulated among Harbor District staff for comment before the Annex was finalized.

Appendix A. Planning Partner Expectations

A. PLANNING PARTNER EXPECTATIONS

ACHIEVING DMA COMPLIANCE FOR ALL PLANNING PARTNERS

The federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390), commonly known as the 2000 Stafford Act amendments, was approved by Congress on October 10, 2000. This act required state and local governments to develop hazard mitigation plans as a condition for federal grant assistance. Among other things, this legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide. DMA 2000 is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities. Prior to 2000, federal legislation provided funding for disaster relief, recovery, and some hazard mitigation planning. The DMA improves upon the planning process by emphasizing the importance of communities planning for disasters before they occur.

The Disaster Mitigation Act defines a "local government" as:

> *Any county, municipality, city, town, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity*

Any local government wishing to pursue funding afforded under FEMA Hazard Mitigation Grant Programs must have an approved hazard mitigation plan in order to be eligible to apply for these funds.

One of the goals of the multi-jurisdictional approach to hazard mitigation planning is to achieve compliance with the Disaster Mitigation Act (DMA) for all participating members in the planning effort. DMA compliance must be certified for each member in order to maintain eligibility for the benefits under the DMA. Whether our planning process generates ten individual plans or one large plan that has a chapter for each partner jurisdiction, the following items must be addressed by each planning partner to achieve DMA compliance:

- **Participate in the process.** It must be documented in the plan that each planning partner "participated" in the process that generated the plan. There is flexibility in defining "participation." Participation can vary based on the type of planning partner (i.e.: City vs. a Special Purpose District). However, the level of participation must be defined and the extent for which this level of participation has been met for each partner must be contained in the plan context.
- **Consistency Review.** Review of existing documents pertinent to each jurisdiction to identify policies or recommendations that are not consistent with those documents reviewed in producing the "parent" plan or have policies and recommendations that complement the hazard mitigation initiatives selected (i.e.: comp plans, basin plans or hazard specific plans).
- **Action Review.** For plan updates, a review of the strategies from your prior action plan to determine those that have been accomplished and how they were accomplished; and why those that have not been accomplished were not completed.
- **Update Localized Risk Assessment.** Personalize the Risk Assessment for each jurisdiction by removing hazards not associated with the defined jurisdictional area or redefining vulnerability based on a hazard's impact to a jurisdiction. This phase will include:

  - A ranking of the risk
  - A description of the number and type of structures at risk
  - An estimate of the potential dollar losses to vulnerable structures
  - A general description of land uses and development trends within the community, so that mitigation options can be considered in future land use decisions.

- **Capability assessment.** Each planning partner must identify and review their individual regulatory, technical and financial capabilities with regards to the implementation of hazard mitigation actions.
- **Personalize mitigation recommendations.** Identify and prioritize mitigation recommendations specific to each jurisdiction's defined area.
- **Create an Action Plan.**
- **Incorporate Public Participation.** Each jurisdiction must present the Plan to the public for comment at least once, within two weeks prior to adoption.
- **Plan must be adopted by each jurisdiction.**

One of the benefits to multi-jurisdictional planning is the ability to pool resources. This means more than monetary resources. Resources such as staff time, meeting locations, media resources, technical expertise will all need to be utilized to generate a successful plan. In addition, these resources can be pooled such that decisions can be made by a peer group applying to the whole and thus reducing the individual level of effort of each planning partner. This will be accomplished by the formation of a steering committee made up of planning partners and other "stakeholders" within the planning area. The size and makeup of this steering committee will be determined by the planning partnership. This body will assume the decision-making responsibilities on behalf of the entire partnership. This will streamline the planning process by reducing the number of meetings that will need to be attended by each planning partner. The assembled Steering Committee for this effort will meet monthly on an as needed basis as determined by the planning team, and will provide guidance and decision making during all phases of the plan's development.

With the above participation requirements in mind, each partner is expected to aid this process by being prepared to develop its section of the plan. To be an eligible planning partner in this effort, each planning partner shall provide the following:

A. A "Letter of Intent to participate" or resolution to participate to the Planning Team (see exhibit A).
B. Designate a lead point of contact for this effort. This designee will be listed as the hazard mitigation point of contact for your jurisdiction in the plan.
C. Support and participate in the selection and function of the Steering Committee selected to oversee the development of this plan.
D. Provide support in the form of mailing list, possible meeting space, and public information materials, such as newsletters, newspapers or direct mailed brochures, required to implement the public involvement strategy developed by the Steering Committee.
E. Participate in the process. There will be many opportunities as this plan evolves to participate. Opportunities such as:
   i) Steering Committee meetings
   ii) Public meetings or open houses
   iii) Workshops/ planning partner specific training sessions
   iv) Public review and comment periods prior to adoption

At each and every one of these opportunities, attendance will be recorded. Attendance records will be used to document participation for each planning partner. No thresholds will be established as minimum levels of participation. However, each planning partner should attempt to attend all possible meetings and events.

F. There will be one ***mandatory*** workshop that all planning partners will be required to attend. This workshop will cover the proper completion of the jurisdictional annex template which is the basis for each partner's jurisdictional chapter in the plan. Failure to have a representative at this workshop will

disqualify the planning partner from participation in this effort. The schedule for this workshop will be such that all committed planning partners will be able to attend.

G. After participation in the mandatory template workshop, each partner will be required to complete their template and provide it to the planning team in the time frame established by the Steering Committee. Failure to complete your template in the required time frame may lead to disqualification from the partnership.
H. Each partner will be expected to perform a "consistency review" of all technical studies, plans, ordinances specific to hazards to determine the existence of any not consistent with the same such documents reviewed in the preparation of the parent plan.
I. Each partner will be expected to review the Risk Assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide the jurisdiction specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.
J. Each partner will be expected to review and determine if the mitigation recommendations chosen in the parent plan will meet the needs of its jurisdiction. Projects within each jurisdiction consistent with the parent plan recommendations will need to be identified and prioritized, and reviewed to determine their benefits vs. costs.
K. Each partner will be required to create its own action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
L. Each partner will be required to formally adopt the plan.

Templates and instructions to aid in the compilation of this information will be provided to all committed planning partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee.

**** Note**: Once this plan is completed, and DMA compliance has been determined for each partner, maintaining that eligibility will be dependent upon each partner implementing the plan implementation-maintenance protocol identified in the plan. At a minimum, this means completing the on-going plan maintenance protocol identified in the plan. Partners that do not participate in this plan maintenance strategy may be deemed ineligible by the partnership, and thus lose their DMA eligibility.**

Eligible entities that do not wish to participate in the 2017 multi-jurisdictional planning process or fail to meet the requirements contained in this document may choose to link to the plan in pursuit of future adoption after the completion of the 2017 effort.

Exhibit A.
Example Letter of Intent to Participate

Del Norte County Multi-Jurisdiction Hazard Mitigation Planning Partnership
C/O Stephen Veith, Tetra Tech, Inc.
1020 SW Taylor Street, Suite 530
Portland, OR 97205

Dear Del Norte Planning Team,

Please be advised that the _____ (***insert district name***) is committed to participating in the update to the Del Norte County Multi-Jurisdiction Hazard Mitigation Plan. As the jurisdictional representative tasked with this planning effort, I certify that we will commit all necessary resources in order to meet Partnership expectations as outlined in the "Planning Partners expectations" document provided by the planning team, in order to obtain Disaster Mitigation Act (DMA) compliance for our jurisdiction.

Mr./Ms. _____ will be our jurisdiction's point of contact for this process and they can be reached at ***(insert: address, phone number and e-mail address)***.

Sincerely,

Name _____

Title _____

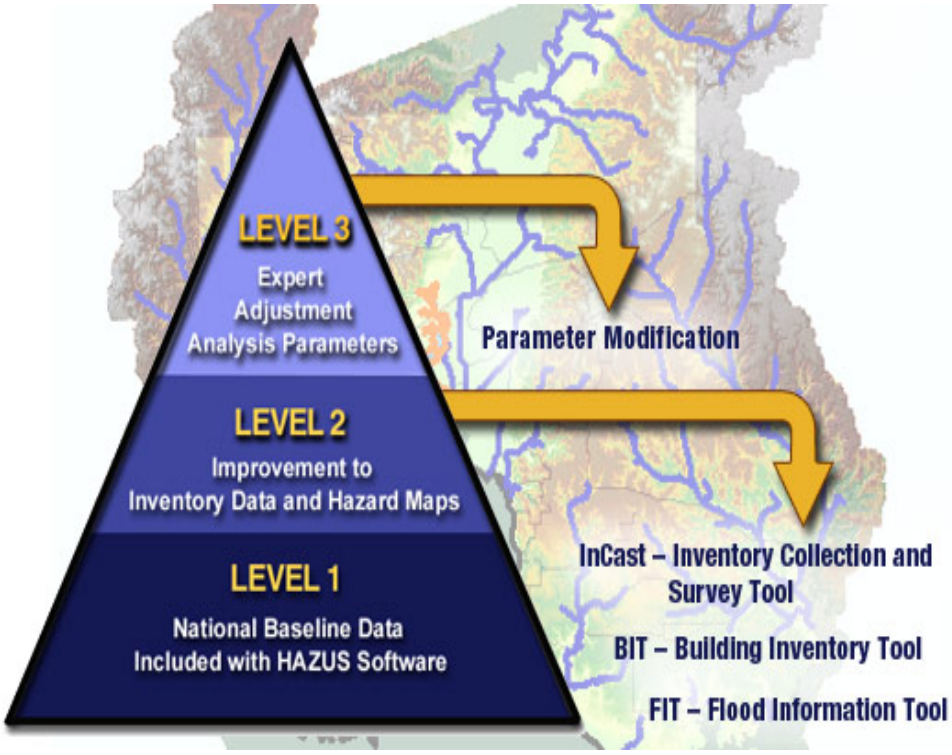
Exhibit B.
Planning Team Contact information

Name	Representing	Address	e-mail
Cindy Henderson	Del Norte County Office of Emergency Services	981 H Street, Suite 240 Crescent City, CA 95531	chenderson@co.del-norte.ca.us
Carol Baumann	Tetra Tech, Inc.	1020 SW Taylor St., Ste. 530 Portland, Oregon 97205	carol.baumann@tetratech.com
Rob Flaner	Tetra Tech, Inc.	90 S. Blackwood Ave Eagle, ID 83616	rob.flaner@tetratech.com
Stephen Veith	Tetra Tech, Inc.	1020 SW Taylor St., Ste. 530 Portland, Oregon 97205	stephen.veith@tetratech.com

Exhibit C.
Overview of HAZUS

Overview of HAZUS-MH (Multi-Hazard)

http://www.fema.gov/hazus/dl_mhpres.shtm**HAZUS-MH**, is a nationally applicable standardized methodology and software program that contains models for estimating potential losses from earthquakes, floods, tsunamis, and hurricane winds. HAZUS-MH was developed by the Federal Emergency Management Agency (FEMA) under contract with the National Institute of Building Sciences (NIBS). NIBS maintains committees of wind, flood, earthquake and software experts to provide technical oversight and guidance to HAZUS-MH development. Loss estimates produced by HAZUS-MH are based on current scientific and engineering knowledge of the effects of hurricane winds, floods, and earthquakes. Estimating losses is essential to decision-making at all levels of government, providing a basis for developing mitigation plans and policies, emergency preparedness, and response and recovery planning.



HAZUS-MH uses state-of-the-art geographic information system (GIS) software to map and display hazard data and the results of damage and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of hurricane winds, floods, tsunamis, and earthquakes on populations. The latest release, HAZUS-MH 4.0, is an updated version of HAZUS-MH that incorporates many new features which improve both the speed and functionality of the models. For information on software and hardware requirements to run HAZUS-MH 4.0, see HAZUS-MH Hardware and Software Requirements.

HAZUS-MH Analysis Levels

HAZUS-MH provides for three levels of analysis:

- A Level 1 analysis yields a rough estimate based on the nationwide database and is a great way to begin the risk assessment process and prioritize high-risk communities.
- A Level 2 analysis requires the input of additional or refined data and hazard maps that will produce more accurate risk and loss estimates. Assistance from local emergency management personnel, city planners, GIS professionals, and others may be necessary for this level of analysis.
- A Level 3 analysis yields the most accurate estimate of loss and typically requires the involvement of technical experts such as structural and geotechnical engineers who can modify loss parameters based on to the specific conditions of a community. This level analysis will allow users to supply their own techniques to study special conditions such as dam breaks and tsunamis. Engineering and other expertise is needed at this level.

Three data input tools have been developed to support data collection. The Comprehensive Data Management System (CDMS) helps users collect and manage local building data for more refined analyses than are possible with the national level data sets that come with HAZUS. CDMS has expanded capabilities for multi-hazard data collection. HAZUS-MH includes an enhanced Building Inventory Tool (BIT) allows users to import building data and is most useful when handling large datasets, such as tax assessor records. The Flood Information Tool (FIT) helps users manipulate flood data into the format required by the HAZUS flood model. All Three tools are included in the HAZUS-MH MR1 Application DVD.

HAZUS-MH Models

The **HAZUS-MH Hurricane Wind Model** gives users in the Atlantic and Gulf Coast regions and Hawaii the ability to estimate potential damage and loss to residential, commercial, and industrial buildings. It also allows users to estimate direct economic loss, post-storm shelter needs and building debris. In the future, the model will include the capability to estimate wind effects in island territories, storm surge, indirect economic losses, casualties, and impacts to utility and transportation lifelines and agriculture. Loss models for other severe wind hazards will be included in the future. Details about the Hurricane Wind Model.

The **HAZUS-MH Flood Model** is capable of assessing riverine and coastal flooding. It estimates potential damage to all classes of buildings, essential facilities, transportation and utility lifelines, vehicles, and agricultural crops. The model addresses building debris generation and shelter requirements. Direct losses are estimated based on physical damage to structures, contents, and building interiors. The effects of flood warning are taken into account, as are flow velocity effects. Details about the Flood Model.

The **HAZUS-MH Earthquake Model**, The HAZUS earthquake model provides loss estimates of damage and loss to buildings, essential facilities, transportation and utility lifelines, and population based on scenario or probabilistic earthquakes. The model addresses debris generation, fire-following, casualties, and shelter requirements. Direct losses are estimated based on physical damage to structures, contents, inventory, and building interiors. The earthquake model also includes the Advanced Engineering Building Module for single- and group-building mitigation analysis. Details about the Earthquake Model.

The **HAZUS-MH Tsunami Model** represents the first new disaster module for the Hazus software in almost 15 years and is the culmination of work completed on the Hazus Tsunami Methodology Development (FEMA, 2013) by a team of tsunami experts, engineers, modelers, emergency planners, economists, social scientists, geographic information system (GIS) analysts, and software developers. A Tsunami Oversight Committee provided technical direction and review of the methodology development. New features with the model include:

- **Territory Analysis:** This release represents the first time that analysis will be available for U.S. territories (Guam, American Samoa, Commonwealth of Northern Mariana Islands and U.S. Virgin Islands).
- **New Point Format:** The Hazus General Building Stock (GBS) for the Tsunami release will use a new National Structure Inventory (NSI) point format (details in User Release Notes available with download).
- **Case Studies:** The Tsunami Module will require user-provided data, so the Hazus Team has provided five case study datasets for users, which will be available on the MSC download site.
- **Two Types of Damage Analysis:** Users will be able to run both near-source (Earthquake + Tsunami) and distant-source (Tsunami only) damage analysis.

Additionally, HAZUS-MH can perform multi-hazard analysis by providing access to the average annualized loss and probabilistic results from the hurricane wind, flood, and earthquake models and combining them to provide integrated multi-hazard reports and graphs. HAZUS-MH also contains a third-party model integration capability that provides access and operational capability to a wide range of natural, man-made, and technological hazard models (nuclear and conventional blast, radiological, chemical, and biological) that will supplement the natural hazard loss estimation capability (hurricane wind, flood, tsunami and earthquake) in HAZUS-MH.

Appendix B. Procedures for Linking to Hazard Mitigation Plan

B. PROCEDURES FOR LINKING TO HAZARD MITIGATION PLAN

Not all eligible local governments are included in the Del Norte County Operational Area Hazard Mitigation Plan. Some or all of these non-participating local governments may choose to "link" to the Plan at some point to gain eligibility for programs under the federal Disaster Mitigation Act (DMA). The following "linkage" procedures define the requirements established by the planning team for dealing with an increase in the number of planning partners linked to this plan. No currently non-participating jurisdiction within the defined planning area is obligated to link to this plan. These jurisdictions can choose to do their own "complete" plan that addresses all required elements of Section 201.6 or Section 201.7 of Chapter 44 of the Code of Federal Regulations (44 CFR).

INCREASING THE PARTNERSHIP THROUGH LINKAGE

Eligibility

Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period (5 years after final approval). Eligibility will be determined by the following factors:

- The linking jurisdiction is a local or tribal government as defined by the Disaster Mitigation Act.
- The boundaries or service area of the linking jurisdiction is completely contained within the boundaries of the planning area established during the 2018 hazard mitigation plan development process.
- The linking jurisdiction's critical facilities were included in the critical facility and infrastructure risk assessment completed during the 2018 plan development process.

Requirements

It is expected that linking jurisdictions will complete the requirements outlined below and submit their completed template to the lead agency Del Norte County Office of Emergency Services for review within six months of beginning the linkage process:

- The eligible jurisdiction requests a "Linkage Package" by contacting the Point of Contact (POC) for the plan:

  Cindy Henderson, Emergency Services Manager
  981 H Street
  Crescent City, CA 95531
  Telephone: 707-465-0430
  e-mail Address: chenderson@co.del-norte.ca.us

- The POC will provide a linkage procedure package that includes linkage information and a linkage tool-kit:

  - Linkage Information

  - Procedures for linking to the multi-jurisdictional hazard mitigation plan
  - Planning partner's expectations for linking jurisdictions
  - A sample "letter of intent" to link to the multi-jurisdictional hazard mitigation plan
  - A copy of Section 201.6 and Section 201.7 of 44 CFR, which defines the federal requirements for a local and tribal hazard mitigation plans.

- Linkage Tool-Kit

  - Copy of Volume 1 and 2 of the plan
  - A special purpose district or tribe template and instructions
  - A catalog of hazard mitigation alternatives
  - A sample resolution for plan adoption

- The new jurisdiction will be required to review both volumes of the Del Norte County Operational Area Hazard Mitigation Plan, which include the following key components for the planning area:

  - Goals and objectives
  - The planning area risk assessment
  - Comprehensive review of alternatives
  - Countywide actions
  - Plan implementation and maintenance procedures.

  Once this review is complete, the jurisdiction will complete its specific annex using the template and instructions provided by the POC.

- The development of the new jurisdiction's annex must not be completed by one individual in isolation. The jurisdiction must develop, implement and describe a public involvement strategy and a methodology to identify and vet jurisdiction-specific actions. The original partnership was covered under a uniform public involvement strategy and a process to identify actions that covered the planning area described in Volume 1 and Volume 2 of this plan. Since new partners were not addressed by these strategies, they will have to initiate new strategies and describe them in their annex. For consistency, new partners are encouraged to develop and implement strategies similar to those described in this plan.
- The public involvement strategy must ensure the public's ability to participate in the plan development process. At a minimum, the new jurisdiction must solicit public opinion on hazard mitigation at the onset of the linkage process and hold one or more public meetings to present the draft jurisdiction-specific annex for comment at least two weeks prior to adoption by the governing body. The POC will have resources available to aid in the public involvement strategy, including:

  - The questionnaire utilized in the plan development
  - Presentations from public meeting workshops and the public comment period
  - Press releases used throughout the planning process
  - The plan website.

- The methodology to identify actions should include a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard and a description of the process by which chosen actions were identified. As part of this process, linking jurisdictions should coordinate the selection of actions amongst the jurisdiction's various departments.
- Once their public involvement strategy and template are completed, the new jurisdiction will submit the completed package to the POC for a pre-adoption review to ensure conformance with the multi-jurisdictional plan format and linkage procedure requirements.
- The POC will review for the following:

  - Documentation of public involvement and action plan development strategies
  - Conformance of template entries with guidelines outlined in instructions
  - Chosen actions are consistent with goals, objectives and mitigation catalog of the Del Norte County Operational Area Hazard Mitigation Plan
  - A designated point of contact
  - A completed FEMA plan review crosswalk.

- Plans will be reviewed by the POC and submitted to California Governor's Office of Emergency Services (Cal OES) for review and approval.
- Cal OES will review plans for state compliance. Non-compliant plans are returned to the lead agency for correction. Compliant plans are forwarded to FEMA for review with annotation as to the adoption status.
- FEMA reviews the linking jurisdiction's plan in association with the approved plan to ensure DMA compliance. FEMA notifies the new jurisdiction of the results of review with copies to Cal OES and the approved plan lead agency.
- Linking jurisdiction corrects plan shortfalls (if necessary) and resubmits to Cal OES through the approved plan lead agency.
- For plans with no shortfalls from the FEMA review that have not been adopted, the new jurisdiction governing authority adopts the plan and forwards adoption resolution to FEMA with copies to lead agency and Cal OES.
- FEMA regional director notifies the new jurisdiction's governing authority of the plan's approval.

The new jurisdiction plan is then included with the multi-jurisdiction hazard mitigation plan and the linking jurisdiction is committed to participate in the ongoing plan maintenance strategy identified in Chapter 21, Volume 1 of the hazard mitigation plan.

DECREASING THE PARTNERSHIP

The eligibility afforded under this process to the planning partnership can be rescinded in two ways. First, a participating planning partner can ask to be removed from the partnership. This may be done because the partner has decided to develop its own plan or has identified a different planning process for which it can gain eligibility. A partner that wishes to voluntarily leave the partnership shall inform the POC of this desire in writing. This notification can occur any time during the calendar year. A jurisdiction wishing to pursue this avenue is advised to make sure that it is eligible under the new planning effort, to avoid any period of being out of compliance with the Disaster Mitigation Act.

After receiving this notification, the POC shall immediately notify both Cal OES and FEMA in writing that the partner in question is no longer covered by the Del Norte County Operational Area Hazard Mitigation Plan, and that the eligibility afforded that partner under this plan should be rescinded based on this notification.

The second way a partner can be removed from the partnership is by failure to meet the participation requirements specified in the "Planning Partner Expectations" package provided to each partner at the beginning of the process, or the plan maintenance and implementation procedures specified in Volume 1 of the plan. Each partner agreed to these terms by adopting the plan.

Eligibility status of the planning partnership will be monitored by the POC. The determination of whether a partner is meeting its participation requirements will be based on the following parameters:

- Are partners notifying the POC of changes in designated points of contact?
- Are the partners supporting the Steering Committee by attending designated meetings or responding to needs identified by the body?

- Are the partners continuing to be supportive as specified in the planning partners expectations package provided to them at the beginning of the process?

Participation in the plan does not end with plan approval. This partnership was formed on the premise that a group of planning partners would pool resources and work together to strive to reduce risk within the planning area. Failure to support this premise lessens the effectiveness of this effort. The following procedures will be followed to remove a partner due to the lack of participation:

- The POC will advise the Steering Committee of this pending action and provide evidence or justification for the action. Justification may include: failure to attend meetings determined to be mandatory by the Steering Committee, failure to act on the partner's action plan, or inability to reach designated point of contact after a minimum of five attempts.
- The Steering Committee will review information provided by POC, and determine action by a vote. The Steering Committee will invoke the voting process established in the ground rules established during the formation of this body.
- Once the Steering Committee has approved an action, the POC will notify the planning partner of the pending action in writing via certified mail. This notification will outline the grounds for the action, and ask the partner if it is their desire to remain as a partner. This notification shall also clearly identify the ramifications of removal from the partnership. The partner will be given 30 days to respond to the notification.
- Confirmation by the partner that they no longer wish to participate or failure to respond to the notification shall trigger the procedures for voluntary removal discussed above.
- Should the partner respond that they would like to continue participation in the partnership, they must clearly articulate an action plan to address the deficiencies identified by the POC. This action plan shall be reviewed by the Steering Committee to determine whether the actions are appropriate to rescind the action. Those partners that satisfy the Steering Committee's review will remain in the partnership, and no further action is required.
- Automatic removal from the partnership will be implemented for partners where these actions have to be initiated more than once in a 5-year planning cycle.

Appendix C. Annex Instructions and Templates

C.1–Municipal Annex Instructions and Template

INSTRUCTIONS FOR COMPLETING MUNICIPAL/UNINCORPORATED COUNTY ANNEX TEMPLATE

The jurisdictional annex templates for the 2018 Del Norte County Hazard Mitigation Plan update will be completed in three phases. **This document provides instructions for completing all phases of the template for municipalities / unincorporated county areas.**

If your jurisdiction completed and submitted Phase 1 and/or Phase 2, Phase 3 has been added to the end of your document. Any planning team comments, questions or suggestions have been included as blue highlighted notes and/or comments. Any text edits were made with changes tracked for review. Any yellow highlights indicate areas where missing information should be filled in.
If your jurisdiction did not complete Phase 1 or Phase 2, please complete all phases at this time.

The target timeline for phase completion is as follows:

- **Phase 1** – Jurisdictional profile
  - Deployed: Mid-October, 2017
  - Due: Mid-February, 2018
- **Phase 2** – Capability assessment
  - Deployed: Mid-November, 2017
  - Due: Mid-February, 2018
- **Phase 3** – Risk ranking and action plan development
  - Deployed: Mid-February, 2018
  - Due: Monday, April 2, 2018

Any questions on completing the template should be directed to:

Kristen Gelino
Tetra Tech, Inc.
(917) 426-4594 or (646) 576-4029
E-mail: kristen.gelino@tetratech.com

Municipality Annex:

This document provides instructions for completing **all phases** of the jurisdictional annex template for municipalities. **Templates should be completed by April 2, 2018.** Your completed template should be submitted to:

Kristen Gelino
Tetra Tech, Inc.
(917) 426-4594 or (646) 576-4029
E-mail: kristen.gelino@tetratech.com

A Note About Formatting:

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

CHAPTER TITLE

In the chapter title at the top of Page 1, type in the complete official name of your municipality (City of Pleasantville, West County, etc.). Please do not change the chapter number. Revise only the jurisdiction name.

HAZARD MITIGATION PLAN POINT OF CONTACT

Provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, please let the planning team know by inserting a comment into the document.

JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated, in a style similar to the example provided in the box below. This should be information that will not be provided in the overall mitigation plan document. For population data, use the most current population figure for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state office of financial management).

Example Jurisdiction Profile:

- **Date of Incorporation**—1858
- **Current Population**—17,289 as of July 2014 (2014 Department of Finance estimates)
- **Population Growth**—Based on state Department of Finance data, Smithburg has experienced a flat rate of growth. The population increased only 3.4% since 2010 and growth averaged 0.74% per year from 2000 to 2014.
- **Location and Description—**The City of Smithburg is on the Pacific coast, 760 miles north of Los Angeles and 275 miles north of San Francisco. The nearest seaport is Eureka, five miles south on Humboldt Bay. Smithburg is the home of Smithburg State University and is situated between the communities of Murphy to the north and Blue Lake to the east. It sits at the intersection of US Highway 101 and State Route 299.
- **Brief History**—The Smithburg area was settled during the gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resource. Smithburg was incorporated in 1858 and by 1913 the Smithburg Teachers College, a predecessor to today's Smithburg State University was founded. Recently, the presence of the college has come to shape Smithburg's population into a young, liberal, and educated crowd. In 1981 Smithburg developed the Smithburg Marsh and Wildlife sanctuary, an environmentally friendly sewage treatment enhancement system.
- **Climate**—Smithburg's weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80% of that falling from November through April. The average year-round temperature is 59ºF. Humidity averages 72 to 87 percent. Prevailing winds are from the north, and average 5 mph.
- **Governing Body Format**—The City of Smithburg is governed by a five-member city council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the City Manager's Office. The City has 13 commissions and task forces, which report to the City Council. The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.

Phase 2 Instructions

If your jurisdiction participated in a previously approved hazard mitigation plan, we have transferred relevant content to the Phase 2 portion of your annex. All pre-populated content should be reviewed for accuracy and completeness.

DEVELOPMENT TRENDS

In the yellow-highlighted text that says "Describe trends in general," provide a brief description of your jurisdiction's recent development trends similar to the following example:

> Anticipated development levels for Smithburg are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing and a push for more secondary mother-in-law units on properties. The City of Smithburg adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with the plan. Future growth and development in the City will be managed as identified in the general plan.

Complete the table titled "Recent and Expected Future Development Trends" to demonstrate the development that occurred during the past 5 years, including a description of any development which may be located within a hazard zone. Provide additional information on any anticipated development. Please note that we are specifically looking for development permits for new construction. If your jurisdiction does not have the ability to differentiate between permit types, please list the total number of permits and include a note or comment in the document indicating what you have provided.

If your jurisdiction does not have the ability to track the number of permits for each hazard area, please insert a qualitative description of where development has occurred.

CAPABILITY ASSESSMENT

Please note that it is unlikely that you will be able to complete all sections of the capability assessment on your own. You will likely need to reach out to other departments within your local government, such as planning, finance, public works, etc. It may be beneficial to provide these individuals with background information about this planning process, as you will want input from them again during Phase 3 of your annex development.

Legal and Regulatory Capability

In the table titled "Legal and Regulatory Capability," indicate "Yes" or "No" for each listed code, ordinance, requirement or planning document in each of the following columns:

- **Local Authority**—Enter "Yes" if your jurisdiction has prepared or adopted the identified item; otherwise, enter "No." If yes, then enter the code, ordinance number, or plan name and its date of adoption in the comments column. ***Note: If you are entering yes, please be sure that you are providing a comment with the appropriate code, ordinance or plan.***
- **Other Jurisdiction Authority**—Enter "Yes" if there are any regulations that may impact your jurisdiction that are enforced or administered by another agency (e.g., a state agency or special purpose district) or if you know that there are any state or federal regulations or laws that would prohibit local implementation of the identified item; otherwise, enter "No." ***Note: If you answer yes, please indicate the other agency in the comments.***

- **State Mandated**—Enter "Yes" if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter "No." ***Note: If you are entering yes, please be sure that you are providing a comment.***
- **Integration Opportunity**—Enter "Yes" if your jurisdiction has opportunities for integration of the code, ordinance or plan with the hazard mitigation plan. Consider entering "Yes" in the Integration Opportunity column if you answer "yes" to any of the following:

  - If you answered "Yes" in the Local Authority column for this code, ordinance or plan:
    - Does the code, ordinance or plan already address hazards and their potential impacts?
      - If so, should it be updated or revised to reflect new information about risk?
      - If not, will (or should) the code, ordinance or plan be updated over the performance period of the hazard mitigation plan (5 years)?
    - Does the code, ordinance or plan include specific projects that should be reviewed to incorporate hazard mitigation goals?
    - Does the code, ordinance or plan include specific projects that should be included as action items in the hazard mitigation action plan?
  - If you answered "No" in the Local Authority column for this code, ordinance or plan:
    - Will your jurisdiction develop the code, ordinance or plan during the performance period of the hazard mitigation plan?

  Note: Each capability with a "Yes" answer to Integration Opportunity will be discussed in more detail later in the annex. You may wish to keep notes when assessing the Integration Opportunity or review the "Integration with Other Planning Initiatives" section below.

- **Comments**—Enter the code number and adoption date for any local code indicated as being in place; provide other comments as appropriate to describe capabilities for each entry.
- For the categories "General Plan" and "Capital Improvement Plan," answer the specific questions shown, in addition to completing the four columns indicating level of capability.

Development and Permit Capabilities

Complete the table titled "Development and Permitting Capabilities." Examples of qualitative descriptions of buildout in the jurisdiction are as follows:

- The Town is close to being built out. Most new projects involve the demolition of an existing residence and construction of a new replacement residence. A few subdivisions are processed each year.
- There are five parcels of underdeveloped land within the city limits. According to the General Plan, the total potential units for these parcels is 33 units.

Fiscal Capability

Complete the table titled "Fiscal Capability" by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter "Yes" if the resource is fully accessible to your jurisdiction. Enter "No" if there are limitations or prerequisites that may hinder your eligibility for this resource.

Administrative and Technical Capability

Complete the table titled "Administrative and Technical Capability" by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter "Yes" or "No" in the column labeled "Available?". If yes,

then enter the department and position title in the right-hand column. If you have contract support staff with these capabilities, you can still answer "Yes." Indicate in the department column that this resource is provided through contract support.

Education and Outreach Capabilities

Complete the table titled "Education and Outreach" to indicate your jurisdiction's capabilities and existing efforts regarding natural hazard mitigation education and outreach.

National Flood Insurance Program Compliance

Complete the table titled "National Flood Insurance Program Compliance" by indicating your jurisdiction's capabilities related to each question in the table.

Classification in Hazard Mitigation Programs

Complete the table titled "Community Classifications" to indicate your jurisdiction's participation in various national programs related to natural hazard mitigation. For each program enter "Yes" or "No" in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter "N/A" in the third and fourth columns if your jurisdiction is not participating.

Tetra Tech has completed this table for classification programs that have classification information available online:

- **Community Rating System**— https://www.fema.gov/media-library/assets/documents/15846
- **Storm Ready**— https://www.weather.gov/stormready/communities
- **Firewise**— http://www.firewise.org/usa-recognition-program/map-of-active-participants.aspx

For two of the programs, we are not able to access information pertaining to your jurisdiction. If you are unfamiliar with the programs, please visit the websites below:

- **Building Code Effectiveness Grading Schedule (BCEGS)**— https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html
- **Public Protection Classification**— https://firechief.iso.com/FCWWeb/mitigation/ppc0001.jsp

Adaptive Capacity for Climate Change

Consider the climate change impact concerns identified for the planning area:

- Reduced snowpack
- Increased wildfires
- Sea level rise and inland flooding
- Threats to sensitive species (e.g. coho salmon)
- Loss in agricultural productivity (e.g. forestry, wine grapes, nursery products, dairy)
- Public health and safety.

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating that your jurisdiction's capacity for each listed criterion as follows:

- **High**—The capacity exists and is in use.
- **Medium**—The capacity may exist, but is not used or could use some improvement.

- **Low**—The capacity does not exist or could use substantial improvement.
- **Unsure**—Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team and that you review the results of the other capability assessment tables before completing.

INTEGRATION WITH OTHER PLANNING INITIATIVES

The goal of plan integration is to ensure that the potential impact of hazards is considered in planning for future development. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all plans and programs that have already been integrated with the goals and recommendations of the hazard mitigation plan, and those that offer opportunities for future integration. The simplest way to do this is to review the Legal and Regulatory Capabilities table to see which items were marked as "Yes" under the Integration Opportunity column.

Existing Integration

List the items for which you entered "Yes" under the Integration Opportunity column because the plan or ordinance already addresses potential impacts or includes specific projects that should be included as action items in the mitigation action plan. Provide a brief description of how the plan or ordinance is integrated. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects can help mitigate potential hazards. The City will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code and Fire Code**—The City's adoption of the 2016 California Building and Fire codes incorporated local modifications to account for the climatic, topographic and geographic conditions that exist in the City.
- **General Plan 2030**—The general plan includes a "Safety, Services, and Infrastructure" element to protect the community from unreasonable risk by establishing policies and actions to avoid or minimize the following hazards:

    - Geologic and seismic hazards
    - Fire hazards
    - Hazardous materials
    - Flood control
    - Impacts from climate change.

- **Climate Action Plan**—The City's Climate Action Plan includes projects for reducing greenhouse gas emissions and adapting to likely impacts of climate change. These projects were reviewed to identify cross-planning initiates that serve both adaptation and mitigation objectives. ***Note: Any plans that fall into this category should be reviewed during the development of the mitigation strategy in Phase 3 and included as appropriate.***

Opportunities for Future Integration

List any remaining items that say "Yes" in the Integration Opportunity column in the Legal and Regulatory Capabilities and explain the process by which integration will occur. Examples follow:

- **Zoning Code**—The City of Smithburg is conducting a comprehensive update to its zoning code. The opportunity to incorporate additional mitigation and abatement measures will be contemplated for inclusion into the Code.
- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—Smithburg does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the mitigation goals and objectives identified in the mitigation plan.

After you have accounted for all items marked as "Yes" under the Integration Opportunity column, consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Please add any such programs to the integration discussion and provide a brief description of how these program manage (or could be adapted to manage) risk from hazards.

Phase 3 Instructions

If your jurisdiction participated in a previously approved hazard mitigation plan, we have transferred relevant content to the Phase 3 portion of your annex. All pre-populated content should be reviewed for accuracy and completeness.

JURISDICTION-SPECIFIC NATURAL EVENT HISTORY

In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Please refer to the table below that lists Presidential Disaster Declarations for the County. We recommend including most large-scale disasters, unless you know that there were no impacts to your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, please refer to the NOAA storm events database included in the tool kit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)

- Resident input.

If you do not have estimates for dollars of damage caused, please list "Not Available" in the appropriate column or simply list a brief description of the damages (e.g. Main Street closed as a result of flooding, downed trees and residential damages). Please note that tracking such damages is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Presidential Disaster Declarations for Del Norte County

Type of Event	FEMA Disaster #	Declaration Date
Tsunami Waves	DR-1968	4/18/2011
Severe Storms, Flooding, Mudslides, And Landslides	DR-1628	2/3/2006
Hurricane Katrina Evacuation	EM-3248	9/13/2005
Severe Winter Storms And Flooding	DR-1203	2/9/1998
Severe Storms, Flooding, Mud And Landslides	DR-1155	1/4/1997
Severe Winter Storms, Flooding, Landslides, Mud Flows	DR-1044	1/10/1995
The El Nino (The Salmon Industry)	DR-1038	9/13/1994
Severe Winter Storm, Mud & Land Slides, & Flooding	DR-979	2/3/1993
Severe Storms & Flooding	DR-758	2/21/1986
Coastal Storms, Floods, Slides & Tornadoes	DR-677	2/9/1983
Severe Storms & Flooding	DR-329	4/5/1972
Severe Storms & Flooding	DR-283	2/16/1970
Heavy Rains & Flooding	DR-183	12/24/1964
Seismic Sea Wave	DR-169 [a]	4/1/1964
Flood Due To Broken Dam	DR-161 [a]	12/21/1963
Severe Storms, Heavy Rains & Flooding	DR-145 [a]	2/25/1963
Severe Storms & Flooding	DR-138 [a]	10/24/1962
Floods	DR-122 [a]	3/6/1962
Fire (Los Angeles County)	DR-119 [a]	11/16/1961
Heavy Rainstorms & Flood	DR-82 [a]	4/4/1958
Forest Fire	DR-65 [a]	12/29/1956
Flood	DR-47 [a]	12/23/1955
Flood & Erosion	DR-15[a]	2/5/1954

a. Statewide declaration

Note: EM = Emergency Declaration; DR = Disaster Declaration

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy.

The risk ranking for each jurisdiction is included in the Risk Ranking Summary tab in the Loss Matrix included in the toolkit. Tetra Tech has filled in the results for each jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this

knowledge. If this is the case, please note this fact in your template and include what you believe the rank should be and why. For example, drought was ranked as low; however, the jurisdiction's economy is heavily reliant on water using industries, such as agriculture or manufacturing, so you believe it should be ranked as medium.

Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."** This is discussed in more detail in the Hazard Mitigation Action Plan section of these instructions.

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

Risk Ranking Methodology

Review Risk Ranking in Template

Review the hazard risk ranking information that Tetra Tech has provided. The hazard with the highest risk rating is listed at the top of table titled "Hazard Risk Ranking" in your template and was given a rank of 1; the hazard with the second highest rating is listed second with a rank of 2; and so on. Two hazards with equal risk ratings were given the same rank. "High," Medium," and "Low" assignments were given for each hazard of concern based on the total score (probability x impact). It is important to note, that this is determined by the scores rather than assigning a certain number of hazards to each category.

When reviewing the risk ranking results, it is important to remember that this exercise is about categorizing hazards into broad levels of risk (e.g. high, medium, low). It is not an exercise in precision.

Review Risk Ranking in Loss Matrix

The following sections discuss the methodology used to develop the results included in your template. Please refer to the Loss Matrix provided in your tool kit in order to follow along.

Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is generally based on past hazard events in an area, although weight can be given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:

  High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
  Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
  Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
  No impact—None of the population is exposed to a hazard (Impact Factor = 0)

- **Property**—Values are assigned based on the percentage of the total ***property value exposed*** to the hazard event:

  High—25 percent or more of the total replacement value is exposed to a hazard (Impact Factor = 3)
  Medium—10 percent to 24 percent of the total replacement value is exposed to a hazard (Impact Factor = 2)
  Low—9 percent or less of the total replacement value is exposed to the hazard (Impact Factor = 1)
  No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)

- **Economy**—Values were assigned based on the percentage of the total ***property value vulnerable*** to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total replacement value of the property exposed to the hazard. For some hazards, such as wildland fire and landslide, vulnerability may be considered to be the same or a portion of exposure due to the lack of loss estimation tools specific to those hazards.

  High—Estimated loss from the hazard is 10 percent or more of the total replacement value (Impact Factor = 3)
  Medium—Estimated loss from the hazard is 5 percent to 9 percent of the total replacement value (Impact Factor = 2)
  Low—Estimated loss from the hazard is 4 percent or less of the total replacement value (Impact Factor = 1)
  No impact—No loss is estimated from the hazard (Impact Factor = 0).

Impacts on People

The percent of the total population exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **green highlighted column.** For those hazards that do not have a defined extent and location the entire population or a portion of the population is considered to be exposed, depending on the hazard. For the drought hazard, it is common for jurisdictions to list “low” or “none,” because all people in the planning area would be exposed to drought, but impacts to the health and safety of individuals are expected to be minimal.

Impacts on Property

The percent of the total value exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **blue highlighted column.** For those hazards that do not have a defined extent and location (e.g. severe weather) the entire building stock is generally considered to be exposed. For the drought hazard, it is common for jurisdictions to list “low” or “none,” because all structures in the planning area would be exposed to drought, but impacts to structures are expected to be minimal.

Impacts on the Economy

The loss estimates for each hazard of concern that was modeled (i.e. dam failure, flood, earthquake) can be found in the loss estimate matrix in the **purple highlighted column.** For those hazards that have a defined extent and location, but do not have modelled loss results, loss estimates can be the same as exposure or a portion thereof. For example, a large percentage of the building stock may be exposed to landslide or wildland fire risk, but it would not be expected that one event that resulted in loss to all exposed structures would occur. For those hazards that do not have a defined extent and location, exposure is based on the hazard type.

Risk Rating for Each Hazard

A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

This is the number that is shown in the risk ranking table in your template. Generally, score of 30 or greater receive a "high" rating, score between 15 and 30 receive a "medium" rating, and score of less than 15 receives a "low" rating.

JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of $1,000 in any rolling 10-year period since 1978. In the space provided, Tetra Tech has inserted the following information based on data provided by FEMA:

- The number of any FEMA-identified repetitive-loss properties in your jurisdiction.
- The number of any FEMA-identified severe-repetitive-loss properties in your jurisdiction.
- The number (if any) of repetitive-loss or severe-repetitive-loss properties in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure.

Please note that if your jurisdiction has any repetitive loss properties, we would strongly encourage you to include a mitigation action that addresses mitigating these properties.

Other Vulnerabilities

We would strongly encourage you to review the results of the risk assessment included in the tool kit, your jurisdiction's natural events history, and any relevant public comments/input and develop a few sentences that discuss specific risks. You do not need to develop a sentence for every single parameter, but review the results and identify a few issues you would like to highlight. For example:

- Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.
- A magnitude 7.5 earthquake on the Smithburg Fault may produce nearly 1 million tons of structure debris.
- Over the past 10 years, the jurisdiction has experienced more than $6 million in estimated damages from severe storm events.

- More than 50 buildings are located in areas that will be permanently inundated with 12 inches of sea level rise.
- The results of the public survey indicated that 40 percent of Smithburg residents would not be able to be self-sufficient for 5 days following a major event.

In addition, please list any noted vulnerabilities in your jurisdiction related to hazard mitigation that may not be apparent from the risk assessment and other information provided. This may include things such as the following:

- An urban drainage issue that results in localized flooding every time it rains.
- An area of the community that frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, that is not equipped with a generator.
- A neighborhood that has the potential to have ingress and egress cut off as the result of a hazard event, such as a flood or earthquake (e.g. bridge only access).
- Substantial number of buildings in one area of the community are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening public and/or private property.
- A large visitor population that may not be aware of tsunami risk.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your mitigation strategy. Tetra Tech has inserted a few items in this section to get you started. In addition, two examples are shown in the table below.

Noted Vulnerability	Example Mitigation Action
Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.	Develop and implement an annual public information initiative that targets residents in the 0.2 percent annual chance flood hazard area. Provide information on the availability of relatively low cost flood insurance policies.
An urban drainage issue that results in localized flooding every time it rains.	Replace undersized culverts that are contributing to localized flooding. Priority areas include: • The corner of Main Street and 1st Street • Old Oak subdivision.

STATUS OF PREVIOUS PLAN ACTIONS

Please note that this section only applies to jurisdictions that are conducting updates to previously approved hazard mitigation plans. If your jurisdiction has not previously participated in an approved plan, this section will not appear in your annex template. Also, please note that a handout with this information was distributed at the February Steering Committee meeting so work may have already begun on this portion of phase 3.

All action items identified in prior mitigation planning efforts must be reconciled in this plan update. Action items must all be marked as ONE of the following; check the appropriate box (place an X) and provide the following information:

- **Completed—**If an action was completed during the performance period of the prior plan, please check the appropriate box and provide a date of completion in the comment section. If an action has been initiated and is an ongoing program (e.g. annual outreach event), you may mark it as completed and note that it is ongoing in the comments. When removing such actions from your action plan, please consider including them in the existing integration section above. If you have an action that addresses an ongoing program you would like to continue to include it in your action plan, please see the Carried Over to Plan Update section below.

- **Removed—**If action items are to be removed because they are no longer feasible, a reason must be given. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. Place a comment in the comment section explaining why the action is no longer feasible or barriers that prevented the action from being implemented (e.g., "Action no longer considered feasible due to lack of political support."). If the wording and/or intent of a previously identified action is unclear, this can be a reason for removal. A change in community priorities may also be a reason for removal and should be discussed in the comments.
- **Carried Over to Plan Update—**If an action is in progress, ongoing or has not been initiated and you would like to carry it over to the plan update, please check the "Check if Yes" column under "Carried Over to Plan Update." Selecting this option indicates that the action will be included in the mitigation action plan for the 2018 plan. If you are carrying over an action to the plan update, please include a comment describing any action that has been taken or why action was not taken (specifically, any barriers or obstacles that prevented the action from moving forward or slowed progress) The last column "Enter Action #" will be addressed when you develop your actions plan in the following sections. You will need to revisit it after completing the updated action plan in phase 3.

Please ensure that you have provided a status and a comment for each action.

HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

This section is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan. All of the work that you have done thus far should provide you with a plethora of ideas for actions. With this in mind, we recommend that you review the following and develop a list of potential actions:

- **Capability Assessment Section of Annex—**Review the Legal and Regulatory Capability table, the Fiscal Capability table, the Administrative and Technical Capability table, the Education and Outreach table, and the Community Classification table.
  - For any capability that you indicated that you did not have, ask yourself – should we have this capability? If yes, consider including an action to develop/acquire the capability.
  - Example: Ensure a staff person from public works and planning are trained in the use of FEMA's benefit-cost analysis software.
  - Review the Legal and Regulatory capabilities. If any have not been reviewed and updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment (Note: actions such as this should also be identified in the opportunities for future integration section). Also, consider including projects or actions that have been identified in other plans and programs such as Capital Improvement Plans, Strategic Plans, etc. as actions in this plan.
  - For any capability that you indicated you do have, consider how this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.

Wording Your Action Descriptions:

Descriptions of your actions need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan action:

- **Action 1—**Address repetitive-loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Action 2—**Perform a non-structural, seismic retrofit of City Hall.
- **Action 3—**Acquire floodplain property in the Smith subdivision.
- **Action 4—**Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

- **National Flood Insurance Program Compliance Table of this Annex**—Review the table and consider the following:

  - If you have no certified floodplain managers and you have flood risk, consider adding an action to provide key staff members with training appropriate to obtain certification.
  - If your flood damage prevention was last updated in or before 2004, you should identify an action to update your ordinance to ensure it is compliant with NFIP requirements.
  - If you have any outstanding NFIP compliance issues, be sure to add an action to address them.
  - If flood hazard maps do not adequately address the flood risk within your jurisdiction, consider actions to request new mapping or conduct studies.
  - If you don't participate in CRS or you would like to improve your classification, consider this as an action.
  - If the number of flood insurance polices in your jurisdiction is low relative to the number of structures in the floodplain, consider an action that will promote flood insurance in your jurisdiction.

- **Adaptive Capacity for Climate Change Section of this Annex**—Consider your responses to this section. For those criterion that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog). For those criterion you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity. For those criterion that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).
- **Opportunities for Future Integration Section in this Annex**—Review the items you identified in this section. For those items that address land use include them in the prepopulated Action in your template that reads as follows: Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____. For other items listed in this section, consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.
- **Jurisdiction-Specific Vulnerabilities Section in this Annex—**Review the items that you have identified in this section and consider actions that will help reduce these vulnerabilities (see mitigation best practices catalog).
- **Mitigation Best Practices Catalog**—A catalog that includes FEMA and other agency identified best practices, steering committee and other stakeholder recommendations was developed as part of the plan development process and included in your tool kit. Review the catalog and identify those actions that your jurisdiction should consider including in its action plan.
- **Public Input**—Review input received during the process, specifically the public survey results included in your toolkit.
- **Prior Mitigation Planning Efforts**—If your jurisdiction participated in a previous hazard mitigation plan, please be sure to remember to include any actions that were identified as "carry over" actions. Once you have carried them over, return to the Status of Previous Actions table and record the new action number (see discussion below).

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) grants (see fact sheet provided in toolkit). If

you have actions that are not HMGP, PDM or FMA grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.

- **You must identify at least one true mitigation action (i.e. not a preparedness or response action) that is clearly defined and actionable for hazards ranked as "high" or "medium."**

Recommended Actions

We recommend that every planning partner strongly consider the following actions. **The specifics of these actions should be adjusted as needed for the particulars of each community.** You will note that six of these actions have been prepopulated in your annex template. These six actions should be included in every annex and should not be removed.

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.
- Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.
- Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.
- Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:
  - Enforce the flood damage prevention ordinance.
  - Participate in floodplain identification and mapping updates.
  - Provide public assistance/information on floodplain requirements and impacts.
- Identify and pursue strategies to increase adaptive capacity to climate change.
- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

Complete the Table

Complete the table titled "Hazard Mitigation Action Plan Matrix" for all the actions you have identified and would like to include in the plan:

Action Item Numbering:

- Please use the following action item numbering conventions:
  - Del Norte County—DNC-1
  - Crescent City—CC-1

- Enter the action number and description .
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list the hazards, simply indicating all hazards is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department, please ensure that it is clear who the lead agency will be and list supporting agencies in the appropriate column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium" or "Low" as determined for the prioritization process described in the following section.

- Identify funding sources for the action. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table below for project eligibility for FEMA's hazard mitigation assistance grant program.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or "ongoing" (a continual program)

Eligible Activities	HMGP	PDM	FMA
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

Notes: HMGP = Hazard Mitigation Grant Program; PDM = Pre-Disaster Mitigation; FMA = Flood Mitigation Assistance

* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

**Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Source: https://www.fema.gov/hazard-mitigation-assistance-mitigation-activity-chart

Please see the table below for examples of some of the recommended actions above:

Example Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	3, 4, 10	Planning		High	HMGP, PDM, FMA	Short-term
EX-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community including _____.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 7, 8, 10	Planning		Low	Staff Time, General Funds	Ongoing
EX-3—Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.							
Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	4, 8	Emergency Management		Medium	Staff Time, General Funds	Short-term
EX-4—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-5—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 5, 8	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-6—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforcement of the flood damage prevention ordinance • Participate in floodplain identification and mapping updates • Provide public assistance/information on floodplain requirements and impacts.							
New and Existing	Flood, Dam Failure	1, 3, 5, 7, 8, 10	Floodplain Administration Department		Low	Staff Time, General Funds	Ongoing
EX-7—Work with building officials to identify ways to improve the jurisdictions' BCEGS classification.							
New	Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 4, 7	Building and Development Services		Low	Staff Time, General Funds	Short-term
EX-8—Develop a post-disaster recovery plan and a debris management plan.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	9	Emergency Management		Medium	EMPG	Long-term
EX-9—Participate in programs such as Firewise, StormReady and the Community Rating System.							
New and Existing	Dam Failure, Flooding, Severe weather, Wildland fire	3, 4	Emergency Management	Public Works	Low	Staff Time, General Funds	Short-term
EX-10—Identify and pursue strategies to increase adaptive capacity to climate change including _____.							
New and Existing	Dam failure, Drought, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 6, 7, 8	Planning		Low	Staff Time, General Funds	Short-term
EX-11—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
New and Existing	Dam failure, Flooding, Landslide, Severe weather, Wildland fire	2, 6, 9	Planning		Low	Staff Time, General Funds	Short-term

Prioritization of Mitigation Actions

Complete the information in the table titled "Mitigation Strategy Priority Schedule" as follows:

- **Action #**—Indicate the action number from the previous annex table (Hazard Mitigation Action Plan Matrix).
- **# of Objectives Met**—Enter the number of objectives the action will meet.

- **Benefits**—Enter "High," "Medium" or "Low" as follows:

  - High: Action will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Action will have a long-term impact on the reduction of risk exposure to life and property, or action will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the action are difficult to quantify in the short term.

- **Costs**—Enter "High," "Medium" or "Low" as follows:

  - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed action.
  - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
  - Low: Possible to fund under existing budget. Action is or can be part of an existing ongoing program.
  - If you know the estimated cost of an action because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on HMGP, PDM and FMA and the table above.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

This prioritization is a simple way to determine that your identified actions meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM /FMA action grants. The prioritization will identify any actions whose probable benefits will not exceed the probable costs. Those actions identified as high-priority grant funding actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities. A note indicating so should be inserted and a rationale should be provided.

Please see the example below based off the recommended actions:

Table 0-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Action Grant-Eligible?	Can Action Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EX-1	3	High	High	Yes	Yes	No	Medium	High
EX-2	7	Medium	Low	Yes	No	Yes	High	Low
EX-3	2	Low	Medium	No	No	Maybe	Low	Low
EX-4	10	Low	Low	Yes	No	Yes	High	Low
EX-5	3	Low	Low	Yes	No	Yes	High	Low
EX-6	6	Medium	Low	Yes	No	Yes	High	Low
EX-7	3	Medium	Low	Yes	No	Yes	High	Low
EX-8	1	Medium	Medium	Yes	Yes	No	Medium	High
EX-9	2	Medium	Low	Yes	No	Yes	High	Low
EX-10	7	Medium	Low	Yes	No	Yes	High	Medium
EX-11	3	High	Medium	Yes	Yes	No	Medium	High

Analysis of Mitigation Actions

Complete the table titled "Analysis of Mitigation Actions" summarizing the mitigation actions by hazard of concern and the following eight mitigation types. Please note that an action can be more than one mitigation type:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed

management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.

- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

Please see the example below based off the recommended actions, but please note that these recommendations are heavy on generalized actions on the prevention spectrum and light in other areas and specificity. Planning partners should aim to identify at least one action in each category (although this is not required) and should make sure there is at least one action to address "high" and "medium" ranked hazards:

Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Severe weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11			EX-3, 4, 8, 9, 10
Wildland fire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. Please note that this section is optional.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. Please note that this section is optional.

REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

Existing Reports, Plans, Regulatory Tools and Other Resources

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but please be sure to update and enhance any descriptions. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

Staff and Local Stakeholder Involvement in Annex Development

This section should describe in general terms the process by which the annex was developed. Please include general discussion with a focus on who was involved and how the action plan was developed. An example is included below.

> This annex was developed over the course of several months with input from many city departments including public works, public safety, planning, budget and finance, and parks and recreation. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. A action development meeting was held on February 20, 2018 and was attended by representatives from all previously listed department as well as the City Manager's office. Once actions had been identified and compiled in the annex, a draft was internally circulated for comment.

NEXT STEPS

After all jurisdictions have submitted their annexes, the draft plan will be submitted for public comment. Following the public comment period and any revisions responsive to public comment, the plan will be submitted to the California Governor's Office of Emergency Services (Cal OES) for review. After their review and approval, Cal OES will submit the plan to FEMA Region IX for plan review and approval. At that point planning partners will be asked to begin making preparations to formally adopt the plan. Each participating planning partner must have the governing board of their jurisdiction adopt via resolution or ordinance. Once FEMA has reviewed the plan and issued an approved pending adoption (APA) notice, planning partners will be asked to go forth and adopt the plan. Once adopted, planning partners will submit adoption information to Tetra Tech, who will submit the proof of adoption to FEMA. Once such adoption has been received, FEMA will issue final approval via a letter for those planning partners who have adopted the plan. It is very important to understand that approval is not final until proof of adoption has been received by FEMA and they have issued a letter specifically naming your jurisdiction. More information on the review and approval process, along with adoption support materials, will be provided at a later date.

1. JURISDICTION NAME

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

1.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—
- **Current Population**—
- **Population Growth**—
- **Location and Description**—
- **Brief History**—
- **Climate**—
- **Governing Body Format**—___[general description]___. The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.

1.3 DEVELOPMENT TRENDS

_DESCRIBE TRENDS IN GENERAL__.

Table 1-1 summarizes development trends in the performance period since development of the previous hazard mitigation plan and expected future development trends.

Table 1-1. Recent and Expected Future Development Trends

Criterion	Response					
Has your jurisdiction annexed any land since the development of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	Yes/No _____					
Is your jurisdiction expected to annex any areas during the performance period of this plan? • If yes, please describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	Yes/No _____ _____					
Are any areas targeted for development or major redevelopment in the next five years? • If yes, please briefly describe, including whether any of the areas are in known hazard risk areas	Yes/No _____					
How many permits for new construction were issued in your jurisdiction since the development of the previous hazard mitigation plan?		2011	2012	2013	2014	2015
	Single Family	__	__	__	__	__
	Multi-Family	__	__	__	__	__
	Other (commercial, mixed use, etc.)	__	__	__	__	__
Please provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: # • Landslide: # • High Liquefaction Areas: # • Tsunami Inundation Area: # • Wildfire Risk Areas: #					
Please describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.	_____					

1.4 CAPABILITY ASSESSMENT

Jurisdiction Name has performed an inventory and analysis of existing capabilities, plans, programs and policies that enhance its ability to implement mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities is presented in Table 1-2.
- Development and permitting capabilities are presented in Table 1-3.
- An assessment of fiscal capabilities is presented in Table 1-4.
- An assessment of administrative and technical capabilities is presented in Table 1-5.
- An assessment of education and outreach capabilities is presented in Table 1-6.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-7.
- Classifications under various community mitigation programs are presented in Table 1-8.
- The community's adaptive capacity for the impacts of climate change is presented in Table 1-9.

The capability assessment was reviewed in order to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as Community Capacity Building mitigation actions in the Analysis of Mitigation Actions table in Section 1.10.

Table 1-2. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Zoning Code *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Subdivisions *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Stormwater Management *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Post-Disaster Recovery *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Real Estate Disclosure *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Growth Management *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Site Plan Review *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Environmental Protection *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Flood Damage Prevention *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Emergency Management *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Climate Change *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Other: *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Planning Documents				
General Plan *Is the plan compliant with Assembly Bill 2140?* *Yes/No* *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Capital Improvement Plan *How often is the plan updated?* _____ *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Floodplain or Watershed Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Stormwater Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Urban Water Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Habitat Conservation Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Economic Development Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Shoreline Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Community Wildfire Protection Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Forest Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Climate Action Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Comprehensive Emergency Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Threat & Hazard Identification & Risk Assessment (THIRA) *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Post-Disaster Recovery Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Continuity of Operations Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Public Health Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Other: *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No

Table 1-3. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? • If no, who does? If yes, which department?	Yes/No _____
Does your jurisdiction have the ability to track permits by hazard area?	Yes/No
Does your jurisdiction have a buildable lands inventory?	Yes/No

Table 1-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service	Yes/No- If yes, please specify
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Other	Yes/No (if yes, please specify)

Table 1-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes/No	Insert appropriate information
Engineers or professionals trained in building or infrastructure construction practices	Yes/No	Insert appropriate information
Planners or engineers with an understanding of natural hazards	Yes/No	Insert appropriate information
Staff with training in benefit/cost analysis	Yes/No	Insert appropriate information
Surveyors	Yes/No	Insert appropriate information
Personnel skilled or trained in GIS applications	Yes/No	Insert appropriate information
Scientist familiar with natural hazards in local area	Yes/No	Insert appropriate information
Emergency Manager	Yes/No	Insert appropriate information
Grant writers	Yes/No	Insert appropriate information
Other	Yes/No	Insert appropriate information

Table 1-6. Education and Outreach Capability

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	Yes/No Insert appropriate information

Table 1-7. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Insert appropriate information
Who is your floodplain administrator? (department/position)	Insert appropriate information
Are any certified floodplain managers on staff in your jurisdiction?	Yes/No
What is the date that your flood damage prevention ordinance was last amended?	Insert appropriate information
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets/Exceeds Insert appropriate information
When was the most recent Community Assistance Visit or Community Assistance Contact?	Insert appropriate information
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, please state what they are.	Yes/No Insert appropriate information
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, please state why.	Yes/No Insert appropriate information

Criterion	Response
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	Yes/No Insert appropriate information
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving CRS Classification? • Is your jurisdiction interested in joining the CRS program?	Yes/No Yes/No Yes/No
How many flood insurance policies are in force in your jurisdiction?[a] • What is the insurance in force? • What is the premium in force?	Insert appropriate information $_____ $_____
How many total loss claims have been filed in your jurisdiction?[a] • How many claims are still open/were closed without payment? • What were the total payments for losses?	Insert appropriate information Insert appropriate information $_____

a. According to FEMA statistics as of MONTH XX, 201X

Table 1-8. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	Yes/No	_____	Date
Building Code Effectiveness Grading Schedule	Yes/No	_____	Date
Public Protection	Yes/No	_____	Date
Storm Ready	Yes/No	_____	Date
Firewise	Yes/No	_____	Date

Table 1-9. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High/Medium/Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	High/Medium/Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	High/Medium/Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	High/Medium/Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	High/Medium/Low
Comment:	
Participation in regional groups addressing climate risks	High/Medium/Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High/Medium/Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	High/Medium/Low
Comment:	
Identified strategies for adaptation to impacts	High/Medium/Low
Comment:	

Criterion	Jurisdiction Rating[a]
Champions for climate action in local government departments	High/Medium/Low
Comment:	
Political support for implementing climate change adaptation strategies	High/Medium/Low
Comment:	
Financial resources devoted to climate change adaptation	High/Medium/Low
Comment:	
Local authority over sectors likely to be negative impacted	High/Medium/Low
Comment:	
Public Capacity	
Local residents knowledge of and understanding of climate risk	High/Medium/Low
Comment:	
Local residents support of adaptation efforts	High/Medium/Low
Comment:	
Local residents' capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local economy current capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local ecosystems capacity to adapt to climate impacts	High/Medium/Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

1.5 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

1.5.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, Jurisdiction Name made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

Resources listed in Section 1.13 were used to provide information for this annex on hazard events and local capabilities within the jurisdiction.

1.5.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, Jurisdiction Name will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan in actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. New opportunities for integration also will be identified as part of the annual progress report. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.6 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-10 lists past occurrences of natural hazards for which specific damage was recorded in Jurisdiction Name. Other hazard events that broadly affected the entire planning area, including Jurisdiction Name, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-10. Past Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____

1.7 HAZARD RISK RANKING

Table 1-11 presents a local ranking for Jurisdiction Name of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of

occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 1-11. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	_____	_____	High/Medium/Low
2	_____	_____	High/Medium/Low
3	_____	_____	High/Medium/Low
4	_____	_____	High/Medium/Low
5	_____	_____	High/Medium/Low
6	_____	_____	High/Medium/Low
7	_____	_____	High/Medium/Low
8	_____	_____	High/Medium/Low
9	_____	_____	High/Medium/Low

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on property and low impact on economy.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, low impact on property and medium impact on economy.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

1.8 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction.

1.8.1 Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: XX
- Number of FEMA-identified Severe-Repetitive-Loss Properties: XX
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: XX

1.8.2 Other Noted Vulnerabilities

The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 1.10.

1.9 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-12. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Enter Action #
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
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Insert Action Text *Comment:*				Action#
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Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#

1.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-13 lists the actions that make up the Jurisdiction Name hazard mitigation action plan. Table 1-14 identifies the priority for each action. Table 1-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-13. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action #—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.							
Existing	Earthquake, flooding, landslide, tsunami, wildland fire	3, 4, 10	TBD	TBD	High	HMGP, PDM, FMA	Short-term
Action #— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____							
New and Existing	Dam failure, drought, earthquake, flooding, landslide, tsunami, wildland fire	1, 3, 4, 5, 7, 8, 10	TBD	TBD	Low	Staff Time, General Funds	Ongoing
Action #— Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.							
New and Existing	Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire	1, 5, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action #—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.							
New and Existing	Dam failure, flooding, severe weather, tsunami, sea level rise	1, 3, 5, 7, 8, 10	TBD	TBD	Low	Staff Time, General Funds	Ongoing
Action #—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following _____.							
New and Existing	TBD	1, 3, 4, 5, 6, 7, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action #— Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
Existing	Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire	2, 6, 9					
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							

Table 1-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
TBD	3	High	High	Yes	Yes	No	Medium	High
TBD	7	Medium	Low	Yes	No	Yes	High	Low
TBD	3	Low	Low	Yes	No	Yes	High	Low
TBD	6	Medium	Low	Yes	No	Yes	High	Low
TBD	7	Medium	Low	Yes	No	Yes	High	Medium
TBD	3	High	Medium	Yes	Yes	No	Medium	High

a. See the introduction to this volume for explanation of priorities.

Table 1-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building

a. See the introduction to this volume for explanation of mitigation types.

1.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.12 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section

1.13 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

1.13.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Jurisdiction Name Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Jurisdiction Name Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- **Technical Reports and Information—**The following **o**utside resources and references were reviewed:
  - **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.
  - <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.13.2 Staff and Local Stakeholder Involvement in Annex Development

Insert discussion per instructions.

C.2–Tribal Annex Instructions and Template

1. Instructions for Completing Tribal Annex Template

The jurisdictional annex templates for the 2018 Del Norte County Hazard Mitigation Plan will be completed in three phases. **This document provides instructions for completing all phases of the template for the tribe.**

If your jurisdiction completed and submitted Phase 1 and/or Phase 2, Phase 3 has been added to the end of your document. Any planning team comments, questions or suggestions have been included as blue highlighted notes and/or comments. Any text edits were made with changes tracked for review. Any yellow highlights indicate areas where missing information should be filled in. **If your jurisdiction did not complete Phase 1 or Phase 2**, please complete all phases at this time.

The target timeline for phase completion is as follows:

- **Phase 1** – Jurisdictional profile
  - Deployed: Mid-October, 2017
  - Due: Mid-February, 2018
- **Phase 2** – Capability assessment
  - Deployed: Mid-November, 2017
  - Due: Mid-February, 2018
- **Phase 3** – Risk ranking and action plan development
  - Deployed: Mid-February, 2018
  - Due: Monday, April 2, 2018

Any questions on completing the template should be directed to:

Kristen Gelino
Tetra Tech, Inc.
(917) 426-4594 or (646) 576-4029
E-mail: kristen.gelino@tetratech.com

Tribe Annex:

This document provides instructions for completing **Phase 2** of the tribe annex template. **Templates should be completed by April 2, 2018.** Your completed template should be submitted to:

Kristen Gelino
Tetra Tech, Inc.
(917) 426-4594 or (646) 576-4029
E-mail: kristen.gelino@tetratech.com

A Note About Formatting:

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

PHASE 1 INSTRUCTIONS

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your Tribe. This should be the person responsible for monitoring, evaluating and updating the annex. This person should also be the principle liaison between your tribe and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, please let the planning team know by inserting a comment into the document.

TRIBAL PROFILE

Provide information specific to your tribe as indicated, in a style similar to the example provided in the box below. This should be information that will not be provided in the overall mitigation plan document. For population data, use the most current population figure for your tribe based on an official means of tracking (e.g., the U.S. Census).

Example Tribe Profile:

- **Founding Date**—1906
- **Number of Current Tribal Members**—356 as of July 2017 (Tribal records)
- **Current Tribal Planning Area Population**—119 (U.S. Census, 2011-2015 American Community Survey 5-year estimates)
- **Tribal Planning Area Population Growth**—Based on the data tracked by the U.S. Census, Elk Valley Rancheria has experienced a relatively flat rate of growth. The overall population has increased only 1.2% since 2010 and growth averaged 0.2% per year from 2000 to 2017.
- **Location and Description—**The _ Tribal Planning Area is on the Pacific coast, 760 miles north of Los Angeles and 275 miles north of San Francisco. The nearest seaport is Eureka, five miles south on Humboldt Bay. Smithburg is the home of Smithburg State University and is situated between the communities of Murphy to the north and Blue Lake to the east. It sits at the intersection of US Highway 101 and State Route 299.
- **Climate**—_ Tribal Planning Area's weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80% of that falling from November through April. The average year-round temperature is 59ºF. Humidity averages 72 to 87 percent. Prevailing winds are from the north, and average 5 mph.
- **Brief History**—The _ Tribal Planning Area is made up of people of both Tolowa and Yurok descent. (History as presented on website for example).
- **Cultural Heritage**—The Elk Valley Tribe maintains records for cultural resource sites, including cemetaries, villages, and lithic scatters. The Culture and Heritiage Departments' programs are designed to protect, preserve, and enhance Elk Valley traditional cultural values.
- **Tribal Governance and Tribal Departments**—The _ Tribal Planning Area is governed by a constitution adopted on X and defines the territory, jurisdiction, and authority. The General Council elects a five-member council. The Tribal departments consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the Manager's Office. The Tribe has 13 committees, commissions and task forces, which report to the Tribal Council. The Tribal Council assumes responsibility for the adoption of this plan; the Tribal Manager will oversee its implementation. Please provide a description of services of the largest Tribal Departments.
- **Health and Social Service Program**—Describe the health services provided, names of clinics, and any services beyond the general medical care such as transportation program, child care program, senior nutrition program, senior outreach, etc.
- **Development Trends**—Anticipated development levels for _Tribal Planning Area are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing. The _Tribal Planning Area adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. Tribal actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with the plan. Future growth and development in _Tribal Planning Area will be managed as identified in the general plan.
- **Economy and Tourism**—The _Tribal Planning Area is strongly based in the tourism and social service industry. The Tribe is one of the largest employers within Del Norte County and one the primary employers of Tribal members. Please provide information on casino (when opened, facility capabilities – sheltering, and any future enhancements planned).

ASSETS

Please provide an approximate value for the noted areas within the table. Include the sum total value for identified assets for each section in the "Total" line for the section.

Property

The Elk Valley Rancheria owns X acres within its boundaries, valued at $XXX.

Critical Facilities

List **tribe owned** facilties such as department, agency, council facilties, and administrative offices that provide essential services to the Elk Valley Tribal members. Provide an approximate **aggregate replacement value** for each line. A tribe designed critical facilties definition may include:

- Tribal owned facilities such as department, agency, council facilities, and administrative offices that provide essential services to the Elk Valley Tribal members.
- Emergency response facilities needed for disaster response and recovery, including, but not limited to: public safety buildings; emergency services buildings; emergency operations centers; emergency supply storage facilities, and low income, emergency shelter(s), and tribally owned residential structures.
- Medical and health facilities used during both emergency response or in the normal course of business.
- Facilities that may be used to house or shelter disaster victims, such as: schools, gymnasiums, churches, senior, or community centers.
- Public and private utilities and infrastructure vital to maintaining or restoring normal services to the areas damaged by the disaster such as power lines, roads and highways, public works facilities, water and wastewater facilities, etc.
- Community gathering places, including culturally significant areas, parks, community centers, gymnasiums, and meeting halls.
- Cultural sites or facilities that are vitally important to maintaining the Tribes' cultural history, language, and traditions, such as burial grounds, archaeological sites, and artifact storage facilities.

Please use this definition as a guideline when selecting critical facilities. If the asset list and its replacement value is already is another format, it is acceptable to submit that.

PHASE 2 INSTRUCTIONS

CAPABILITY ASSESSMENT

Legal and Regulatory Capability

The intent of this section is to ensure that the tribal government evaluates its capabilities to accomplish hazard mitigation actions through existing tribal planning tools, programs, and other resources. Evaluation needs to address opportunities and challenges.

In the table titled "Tribe Legal and Regulatory Capabilities," enter information into the columns as described below:

- **Tribal Authority or Program in Place**—Enter "Yes" if the tribe has prepared or adopted the identified item; otherwise, enter "No." If yes, then enter the code, ordinance number, or plan name and its date of

adoption or development in the comments column. ***Note: If you are entering yes, please be sure that you are providing a comment with the appropriate code, ordinance or plan.***

- **Other Jurisdiction Authority**—Enter "Yes" if there are any regulations that may impact your jurisdiction that are enforced or administered by another agency (e.g., a state agency or special purpose district) or if the tribe voluntarily participates in the capability (for example a regional planning effort); otherwise, enter "No." ***Note: If you answer yes, please provide an explanation in the comments.***
- **Effect on Loss Reduction**—If you answered "Yes" in either of the two previous columns, enter "Support," "Facilitate" or "Hinder" based on the following definitions:

  - **Support**—Programs, plans, policies, regulations, or practices that help the implementation of mitigation actions
  - **Facilitate**— Programs, plans, policies, regulations, or practices that make implementing mitigation actions easier
  - **Hinder**— Programs, plans, policies, regulations, or practices that conflict with or obstruct mitigation actions.

  Note: In the comments column, please provide a brief discussion regarding any challenges and/or opportunities for improving or enhancing this capability.

  If you answered "No" in both of the two previous columns, please enter N/A.

- **Integration Opportunity**—Enter "Yes" if your jurisdiction has opportunities for integration of the code, ordinance or plan with the hazard mitigation plan. Consider entering "Yes" in the Integration Opportunity column if you answer "yes" to any of the following:

  - If you answered "Yes" in the Tribal Authority column for this code, ordinance or plan:

    - Does the code, ordinance or plan already address hazards and their potential impacts?
      - If so, should it be updated or revised to reflect new information about risk?
      - If not, will (or should) it be updated over the performance period of the hazard mitigation plan (5 years)?
    - Does the code, ordinance or plan include specific projects that should be reviewed to incorporate hazard mitigation goals?
    - Does the code, ordinance or plan include specific projects that should be included as action items in the hazard mitigation action plan?

  - If you answered "No" in the Tribal Authority column for this code, ordinance or plan:

    - Will the Tribe develop the code, ordinance or plan during the performance period of the hazard mitigation plan?

  Note: Each capability with a "Yes" answer to Integration Opportunity will be discussed in more detail later in the annex. You may wish to keep notes when assessing the Integration Opportunity or review the "Integration with Other Planning Initiatives" section below.

- **Comments**—Enter the code number and adoption date for any local code indicated as being in place; provide other comments as appropriate to describe capabilities for each entry and/or opportunities and challenges.
- For the categories "General Plan" and "Capital Improvement Plan," answer the specific questions shown, in addition to completing the four columns indicating level of capability.

Administrative and Technical Capability

Complete the table titled "Tribe Administrative and Technical Capability" by indicating whether the tribe has access to each of the listed personnel resources. Enter "Yes" or "No" in the center column. If yes, then enter the department and position title in the right-hand column. If you have contract support staff with these capabilities, you can still answer "Yes"; indicate in the department column that this resource is provided through contract support.

Education and Outreach Capabilities

Complete the table titled "Tribe Education and Outreach" to indicate your jurisdiction's capabilities and existing efforts regarding natural hazard mitigation education and outreach.

Classification in Hazard Mitigation Programs

Complete the table titled "Community Classifications" to indicate your jurisdiction's participation in various national programs related to natural hazard mitigation. For each program, enter "Yes" or "No" in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter "N/A" in the third and fourth columns if your jurisdiction is not participating.

Adaptive Capacity for Climate Change

Consider the climate change impact concerns identified for the planning area:

- Reduced snowpack
- Increased wildfires
- Sea level rise and inland flooding
- Threats to sensitive species
- Loss in agricultural productivity.

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating the tribe's capacity for each listed criterion as follows:

- **High**—The capacity exists and is in use.
- **Medium**—The capacity may exist, but is not used or could use some improvement.
- **Low**—The capacity does not exist or could use substantial improvement.
- **Unsure**—Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team and that you review the results of the other capability assessment tables before completing.

NATIONAL FLOOD INSURANCE PROGRAM PARTICPATION

The tribe does not currently participate in the National Flood Insurance Program. Tetra Tech will add additional information to this section after the risk assessment is completed.

FUNDING SOURCES

The intent of this section is to demonstrate that the tribal government is aware of viable funding sources to support the implementation of mitigation actions and/or projects.

In the first section, please list and provide a general discussion of any projects or activities that support mitigation. For example, tribal funds might be used for a vegetation management program to reduce wildfire risk.

In the following section, please include a discussion of any FEMA funds that the tribe has received. This includes both pre- and post-disaster funds. Acronyms listed in the section are as follows: Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), Public Assistance Categories C through G (PA C-G) and Fire Management Assistance Grants (FMAG). If the tribe has not received any funding, please indicate so and the text will be revised.

Complete the table titled "Tribe Fiscal Capability" by indicating whether each of the listed financial resources is available to the tribe. Enter "Yes" if the resource is fully accessible. Enter "No" if there are limitations or prerequisites that may hinder your eligibility for this resource.

GRANT ADMINISTRATION

Please identify who in the tribal government is in charge of administering grant funding and briefly describe grant implementation and close out procedures. An example from the Quileute Nation mitigation plan is as follows:

> Mitigation projects and project closeouts will be monitored and updated through the use of the quarterly reporting forms for FEMA-funded projects, provided by the state and/or FEMA, or through the use of a Mitigation Project Progress Report. The Mitigation Project Process Report will be requested annually by the planning director to monitor progress made to-date and/or final closeout. The report will address the current status of the mitigation project, including any changes made to the project, identify implementation problems, and describe appropriate strategies to overcome them. After considering the findings of the submitted progress reports, the planning director may request that the implementing department or agency meet to discuss project conditions.

INTEGRATION WITH OTHER PLANNING INITIATIVES

The goal of plan integration is to ensure that the potential impact of hazards is considered in planning for future development. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals of risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all those that offer opportunities for future integration. The simplest way to do this is to review the Legal and Regulatory Capabilities table to see which items were marked as "Yes" under the Integration Opportunity column. Examples follow:

- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—Smithburg does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the mitigation goals and objectives identified in the mitigation plan.

After you have accounted for all items marked as "Yes" under the Integration Opportunity column, consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Please add any such programs to the integration discussion and provide a brief description of how these program manage (or could be adapted to manage) risk from hazards.

JURISDICTION-SPECIFIC NATURAL EVENT HISTORY

In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to the tribe's assets. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Please refer to the table below that lists Presidential Disaster Declarations for the County. We recommend including most large-scale disasters, unless you know that there were no impacts. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, please refer to the NOAA storm events database included in the tool kit for additional information. Other potential sources of damage information include:

- Preliminary damage estimates filed with the county, state, or federal government
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Public input.

If you do not have estimates for dollars of damage caused, please list "Not Available" in the appropriate column or simply list a brief description of the damages (e.g. Main Street closed as a result of flooding, downed trees and residential damages). Please note that tracking such damages is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Please note that a review of Presidential Declarations for Tribal Nations indicated that there have been no such declarations for Elk Valley Rancheria.

Presidential Disaster Declarations for Del Norte County

Type of Event	FEMA Disaster #	Declaration Date
Tsunami Waves	DR-1968	4/18/2011
Severe Storms, Flooding, Mudslides, And Landslides	DR-1628	2/3/2006
Hurricane Katrina Evacuation	EM-3248	9/13/2005
Severe Winter Storms And Flooding	DR-1203	2/9/1998
Severe Storms, Flooding, Mud And Landslides	DR-1155	1/4/1997
Severe Winter Storms, Flooding, Landslides, Mud Flows	DR-1044	1/10/1995
The El Nino (The Salmon Industry)	DR-1038	9/13/1994

Type of Event	FEMA Disaster #	Declaration Date
Severe Winter Storm, Mud & Land Slides, & Flooding	DR-979	2/3/1993
Severe Storms & Flooding	DR-758	2/21/1986
Coastal Storms, Floods, Slides & Tornadoes	DR-677	2/9/1983
Severe Storms & Flooding	DR-329	4/5/1972
Severe Storms & Flooding	DR-283	2/16/1970
Heavy Rains & Flooding	DR-183	12/24/1964
Seismic Sea Wave	DR-169 [a]	4/1/1964
Flood Due To Broken Dam	DR-161 [a]	12/21/1963
Severe Storms, Heavy Rains & Flooding	DR-145 [a]	2/25/1963
Severe Storms & Flooding	DR-138 [a]	10/24/1962
Floods	DR-122 [a]	3/6/1962
Fire (Los Angeles County)	DR-119 [a]	11/16/1961
Heavy Rainstorms & Flood	DR-82 [a]	4/4/1958
Forest Fire	DR-65 [a]	12/29/1956
Flood	DR-47 [a]	12/23/1955
Flood & Erosion	DR-15[a]	2/5/1954

a. Statewide declaration

Note: EM = Emergency Declaration; DR = Disaster Declaration

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each planning partner has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy.

The risk ranking for each jurisdiction is included in the Risk Ranking Summary tab in the Loss Matrix included in the toolkit. Tetra Tech has filled in the results for each jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in your template and include what you believe the rank should be and why. For example, drought was ranked as low; however, the economy is heavily reliant on water using industries, such as agriculture or manufacturing, so you believe it should be ranked as medium.

Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."** This is discussed in more detail in the Hazard Mitigation Action Plan section of these instructions.

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

Risk Ranking Methodology

Review Risk Ranking in Template

Review the hazard risk ranking information that Tetra Tech has provided. The hazard with the highest risk rating is listed at the top of table titled "Hazard Risk Ranking" in your template and was given a rank of 1; the hazard with the second highest rating is listed second with a rank of 2; and so on. Two hazards with equal risk ratings were given the same rank. "High," Medium," and "Low" assignments were given for each hazard of concern based on the total score (probability x impact). It is important to note, that this is determined by the scores rather than assigning a certain number of hazards to each category.

When reviewing the risk ranking results, it is important to remember that this exercise is about categorizing hazards into broad levels of risk (e.g. high, medium, low). It is not an exercise in precision.

Review Risk Ranking in Loss Matrix

The following sections discuss the methodology used to develop the results included in your template. Please refer to the Loss Matrix provided in your tool kit in order to follow along.

Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is based on past hazard events in an area, with weight given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years and changing climate conditions are not expected to increase the likelihood of landslides, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:
    - High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
    - Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
    - Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
    - No impact—None of the population is exposed to a hazard (Impact Factor = 0)

- **Property**—Values are assigned based on the percentage of the total ***property value exposed*** to the hazard event:

  - High—25 percent or more of the total replacement value is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the total replacement value is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the total replacement value is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)

- **Economy**—Values were assigned based on the percentage of the total ***property value vulnerable*** to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total replacement value of the property exposed to the hazard. For some hazards, such as wildland fire and landslide, vulnerability may be considered to be the same or a portion of exposure due to the lack of loss estimation tools specific to those hazards.

  - High—Estimated loss from the hazard is 10 percent or more of the total replacement value (Impact Factor = 3)
  - Medium—Estimated loss from the hazard is 5 percent to 9 percent of the total replacement value (Impact Factor = 2)
  - Low—Estimated loss from the hazard is 4 percent or less of the total replacement value (Impact Factor = 1)
  - No impact—No loss is estimated from the hazard (Impact Factor = 0).

Impacts on People

The percent of the total population exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **green highlighted column.** For those hazards that do not have a defined extent and location the entire population or a portion of the population is considered to be exposed, depending on the hazard. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all people in the planning area would be exposed to drought, but impacts to the health and safety of individuals are expected to be minimal.

Impacts on Property

The percent of the total value exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **blue highlighted column.** For those hazards that do not have a defined extent and location (e.g. severe weather) the entire building stock is generally considered to be exposed. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all structures in the planning area would be exposed to drought, but impacts to structures are expected to be minimal.

Impacts on the Economy

The loss estimates for each hazard of concern that was modeled (i.e. dam failure, flood, earthquake) can be found in the loss estimate matrix in the **purple highlighted column.** For those hazards that have a defined extent and location, but do not have modelled loss results, loss estimates can be the same as exposure or a portion thereof. For example, a large percentage of the building stock may be exposed to landslide or wildland fire risk, but it would not be expected that one event that resulted in loss to all exposed structures would occur. For those hazards that do not have a defined extent and location, exposure is based on the hazard type.

Risk Rating for Each Hazard

A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

This is the number that is shown in the risk ranking table in your template.

JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of $1,000 in any rolling 10-year period since 1978. Because Elk Valley Rancheria does not participate in the National Flood Insurance Program, there are no repetitive loss properties that meet the FEMA designation.

Other Vulnerabilities

We would strongly encourage you to review the results of the risk assessment included in the tool kit, your natural events history, and any relevant public comments/input and develop a few sentences that discuss specific risks. You do not need to develop a sentence for every single parameter, but review the results and identify a few issues you would like to highlight. For example:

- Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.
- A magnitude 7.5 earthquake on the Smithburg Fault may produce nearly 1 million tons of structure debris.
- Over the past 10 years, the jurisdiction has experienced more than $6 million in estimated damages from severe storm events.
- More than 50 buildings are located in areas that will be permanently inundated with 12 inches of sea level rise.
- The results of the public survey indicated that 40 percent of Smithburg residents would not be able to be self-sufficient for 5 days following a major event.

In addition, please list any noted vulnerabilities in your jurisdiction related to hazard mitigation that may not be apparent from the risk assessment and other information provided. This may include things such as the following:

- An urban drainage issue that results in localized flooding every time it rains.
- An area of the community that frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, that is not equipped with a generator.
- A neighborhood that has the potential to have ingress and egress cut off as the result of a hazard event, such as a flood or earthquake (e.g. bridge only access).
- Substantial number of buildings in one area of the community are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening public and/or private property.
- A large visitor population that may not be aware of tsunami risk.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your mitigation strategy. Tetra Tech has inserted a few items in this section to get you started. In addition, two examples are shown in the table below.

Noted Vulnerability	Example Mitigation Action
Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.	Develop and implement an annual public information initiative that targets residents in the 0.2 percent annual chance flood hazard area. Provide information on the availability of preferred risk flood insurance policies.
An urban drainage issue that results in localized flooding every time it rains.	Replace undersized culverts that are contributing to localized flooding. Priority areas include: • The corner of Main Street and 1st Street • Old Oak subdivision.

HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

This section is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan. All of the work that you have done thus far should provide you with a plethora of ideas for actions. With this in mind, we recommend that you review the following and develop a list of potential actions:

Wording Your Action Descriptions:

Descriptions of your actions need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan action:

- **Action 1—**Address repetitive-loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Action 2—**Perform a non-structural, seismic retrofit of City Hall.
- **Action 3—**Acquire floodplain property in the Smith subdivision.
- **Action 4—**Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

- **Capability Assessment Section of Annex—**Review the Legal and Regulatory Capability table, the Fiscal Capability table, the Administrative and Technical Capability table, the Education and Outreach table, and the Community Classification table.
  - For any capability that you indicated that you did not have, ask yourself – should we have this capability? If yes, consider including an action to develop/acquire the capability.
  - Example: Ensure a staff person from public works and planning are trained in the use of FEMA's benefit-cost analysis software.
  - Review the Legal and Regulatory capabilities. If any have not been reviewed and updated a capability in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment (Note: actions such as this should also be identified in the opportunities for future integration section). Also, consider including projects or actions that have been identified in other plans and programs such as Capital Improvement Plans, Strategic Plans, etc. as actions in this plan.
  - For any capability that you indicated you do have, consider how this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- **Adaptive Capacity for Climate Change Section of this Annex**—Consider your responses to this section. For those criterion that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog). For those criterion you listed as

high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity. For those criterion that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).

- **Opportunities for Future Integration Section in this Annex**—Review the items you identified in this section. For those items that address land use include them in the prepopulated Action in your template that reads as follows: Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____. For other items listed in this section, consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.
- **Jurisdiction-Specific Vulnerabilities Section in this Annex—**Review the items that you have identified in this section and consider actions that will help reduce these vulnerabilities (see mitigation best practices catalog).
- **Mitigation Best Practices Catalog**—A catalog that includes FEMA and other agency identified best practices, steering committee and other stakeholder recommendations was developed as part of the plan development process and included in your tool kit. Review the catalog and identify those actions that your jurisdiction should consider including in its action plan.
- **Public Input**—Review input received during the process, specifically the public survey results included in your toolkit.

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) grants (see fact sheet provided in toolkit). If you have actions that are not HMGP, PDM or FMA grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- **You must identify at least one true mitigation action (i.e. not a preparedness or response action) that is clearly defined and actionable for hazards ranked as "high" or "medium."**

Recommended Actions

We recommend that every planning partner strongly consider the following actions. The specifics of these actions should be adjusted as needed for the particulars of each community. You will note that six of these actions have been prepopulated in your annex template. These five actions should be included in every annex and should not be removed unless they are not applicable.

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.
- Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.
- Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.
- Consider joining the NFIP and maintaining good standing and compliance through implementation of a floodplain management program that, at a minimum, meet the NFIP requirements:

  - Enforce the flood damage prevention ordinance.

  - Participate in floodplain identification and mapping updates.
  - Provide public assistance/information on floodplain requirements and impacts.

- Identify and pursue strategies to increase adaptive capacity to climate change.
- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the planning area-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

Complete the Table

Complete the table titled "Hazard Mitigation Action Plan Matrix" for all the actions you have identified and would like to include in the plan:

- Enter the action number and description .
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list the hazards, simply indicating all hazards is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department, please ensure that it is clear who the lead agency will be and list supporting agencies in the appropriate column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium" or "Low" as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table below for project eligibility for FEMA's hazard mitigation assistance grant program.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or ongoing (a continual program)

Eligible Activities	HMGP	PDM	FMA
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	

Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

Notes: HMGP = Hazard Mitigation Grant Program; PDM = Pre-Disaster Mitigation; FMA = Flood Mitigation Assistance

* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

**Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Source: https://www.fema.gov/hazard-mitigation-assistance-mitigation-activity-chart

Please see the table below for examples of some of the recommended actions above:

Example Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	3, 4, 10	Planning		High	HMGP, PDM, FMA	Short-term
EX-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community including _____.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 7, 8, 10	Planning		Low	Staff Time, General Funds	Ongoing

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-3—Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.							
Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	4, 8	Emergency Management		Medium	Staff Time, General Funds	Short-term
EX-4—Support the planning area-wide initiatives identified in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-5—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 5, 8	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-6—Consider joining the NFIP and maintaining good standing and compliance through implementation of a floodplain management program that, at a minimum, meet the NFIP requirements: • Enforcement of the flood damage prevention ordinance • Participate in floodplain identification and mapping updates • Provide public assistance/information on floodplain requirements and impacts.							
New and Existing	Flood, Dam Failure	1, 3, 5, 7, 8, 10	Floodplain Administration Department		Low	Staff Time, General Funds	Ongoing
EX-7—Work with building officials to identify ways to improve the jurisdictions' BCEGS classification.							
New	Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 4, 7	Building and Development Services		Low	Staff Time, General Funds	Short-term
EX-8—Develop a post-disaster recovery plan and a debris management plan.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	9	Emergency Management		Medium	EMPG	Long-term
EX-9—Participate in programs such as Firewise, StormReady and the Community Rating System.							

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
New and Existing	Dam Failure, Flooding, Severe weather, Wildland fire	3, 4	Emergency Management	Public Works	Low	Staff Time, General Funds	Short-term
EX-10—Identify and pursue strategies to increase adaptive capacity to climate change including _____.							
New and Existing	Dam failure, Drought, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 6, 7, 8	Planning		Low	Staff Time, General Funds	Short-term
EX-11—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
New and Existing	Dam failure, Flooding, Landslide, Severe weather, Wildland fire	2, 6, 9	Planning		Low	Staff Time, General Funds	Short-term

Prioritization of Mitigation Actions

Complete the information in the table titled "Mitigation Strategy Priority Schedule" as follows:

- **Action #**—Indicate the action number from the previous annex table (Hazard Mitigation Action Plan Matrix).
- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter "High," "Medium" or "Low" as follows:
  - High: Action will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Action will have a long-term impact on the reduction of risk exposure to life and property, or action will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the action are difficult to quantify in the short term.
- **Costs**—Enter "High," "Medium" or "Low" as follows:
  - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed action.
  - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
  - Low: Possible to fund under existing budget. Action is or can be part of an existing ongoing program.
  - If you know the estimated cost of an action because it is part of an existing, ongoing program, indicate the amount.
- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)

- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on HMGP, PDM and FMA and the table above.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

This prioritization is a simple way to determine that your identified actions meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM /FMA action grants. The prioritization will identify any actions whose probable benefits will not exceed the probable costs. Those actions identified as high-priority grant funding actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities. A note indicating so should be inserted and a rationale should be provided.

Please see the example below based off the recommended actions:

Table 1-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Action Grant-Eligible?	Can Action Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EX-1	3	High	High	Yes	Yes	No	Medium	High
EX-2	7	Medium	Low	Yes	No	Yes	High	Low
EX-3	2	Low	Medium	No	No	Maybe	Low	Low
EX-4	10	Low	Low	Yes	No	Yes	High	Low

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Action Grant-Eligible?	Can Action Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EX-5	3	Low	Low	Yes	No	Yes	High	Low
EX-6	6	Medium	Low	Yes	No	Yes	High	Low
EX-7	3	Medium	Low	Yes	No	Yes	High	Low
EX-8	1	Medium	Medium	Yes	Yes	No	Medium	High
EX-9	2	Medium	Low	Yes	No	Yes	High	Low
EX-10	7	Medium	Low	Yes	No	Yes	High	Medium
EX-11	3	High	Medium	Yes	Yes	No	Medium	High

Analysis of Mitigation Actions

Complete the table titled "Analysis of Mitigation Actions" summarizing the mitigation actions by hazard of concern and the following eight mitigation types. Please note that an action can be more than one mitigation type:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

Please see the example below based off the recommended actions, but please note that these recommendations are heavy on generalized actions on the prevention spectrum and light in other areas and specificity. Planning partners should aim to identify at least one action in each category (although this is not required) and should make sure there is at least one action to address "high" ranked hazards:

Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Severe weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11			EX-3, 4, 8, 9, 10
Wildland fire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. Please note that this section is optional.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. Please note that this section is optional.

REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

Existing Reports, Plans, Regulatory Tools and Other Resources

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but please be sure to update and enhance any descriptions. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

Process for Annex Development

This section should describe in general terms the process by which the annex was developed. Please include general discussion with a focus on who was involved and how the action plan was developed. An example is included below.

> This annex was developed over the course of several months with input from many staff, tribal members and tribal leadership. Staff members were asked to contribute to the annex development through reviewing and contributing to the capability assessment and participating in action identification and prioritization. A action development meeting was held on February 20, 2018 and was attended by representatives from the Tribal Council. Once actions had been identified and compiled in the annex, a draft was internally circulated for comment and changed were made as appropriate.

ASSURANCES

The language inserted into the annex comes directly from the FEMA plan review tool for tribal plans. This language is required.

NEXT STEPS

After all jurisdictions have submitted their annexes, the draft plan will be submitted for public comment. Following the public comment period and any revisions responsive to public comment, the plan will be submitted to the California Governor's Office of Emergency Services (Cal OES) for review. After their review and approval, Cal OES will submit the plan to FEMA Region IX for plan review and approval. At that point planning partners will be asked to begin making preparations to formally adopt the plan. Each participating planning partner must have the governing board of their jurisdiction adopt via resolution or ordinance. Once FEMA has reviewed the plan and issued an approved pending adoption (APA) notice, planning partners will be asked to go forth and adopt the plan. Once adopted, planning partners will submit adoption information to Tetra Tech, who will submit the proof of adoption to FEMA. Once such adoption has been received, FEMA will issue final approval via a letter for those planning partners who have adopted the plan. It is very important to understand that approval is not final until proof of adoption has been received by FEMA and they have issued a letter specifically naming your jurisdiction. More information on the review and approval process, along with adoption support materials, will be provided at a later date.

1. TRIBE NAME

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

1.2 TRIBE PROFILE

The following is a summary of key information about the tribe and its history:

- **Founding Date—**
- **Number of Current Tribal Members—**
- **Current Tribal Planning Area Population—**
- **Tribal Planning Area Population Growth—**
- **Location and Description—**
- **Climate—**
- **Brief History—**
- **Cultural Heritage—**
- **Tribal Governance and Tribal Departments—**___[general description]___. The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.
- **Health and Social Service Program—**
- **Economy and Tourism—**

Commented [GK1]: If there is any sort of population trend estimate, please provide it. If not, that is OK.

Commented [GK2]: May want to provide a very brief description of departments or staffing.

1.3 DEVELOPMENT TRENDS

_DESCRIBE TRENDS IN GENERAL__.

Table 1-1 summarizes development trends in the performance period since development of the previous hazard mitigation plan and expected future development trends.

Table 1-1. Recent and Expected Future Development Trends

Criterion	Response
Has the tribe acquired any land since the development of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	Yes/No _____
Is the tribe expected to acquire any land during the performance period of this plan? • If yes, please describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	Yes/No _____ _____
Are any areas targeted for development or major redevelopment in the next five years? • If yes, please briefly describe, including whether any of the areas are in known hazard risk areas	Yes/No _____
Please describe the level of buildout of tribal lands, based on a buildable lands inventory. If no such inventory exists, provide a qualitative description.	_____

1.4 ASSETS

___[tribe name]___ owns _____ acres in trust status, valued at $_____. The tribe owns various parcels in fee status, also. Table 1-2 lists major tribal assets.

Table 1-2. ___[tribe name]___ Assets

Asset	Year Built	Value
Critical Facilities		
description	_____	$_value_
description	_____	$_value_
description	_____	$_value_
description	_____	$_value_
description	_____	$_value_
description	_____	$_value_
description		$_value_
Total		$_value_
Tribe Cultural Assets		
description	_____	$_value_
description	_____	$_value_
description	_____	$_value_
description	_____	$_value_
description	_____	$ value
Total		$_value_

1.5 CAPABILITY ASSESSMENT

___[tribe name]___ has performed an inventory and analysis of existing capabilities, plans, programs and policies that enhance its ability to implement mitigation strategies. The introduction at the beginning of this volume of the

hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities is presented in Table 1-3.
- An assessment of administrative and technical capabilities is presented in Table 1-4.
- An assessment of education and outreach capabilities is presented in Table 1-5.
- Classifications under various community mitigation programs are presented in Table 1-6.
- The tribe's adaptive capacity for the impacts of climate change is presented in Table 1-7.

Table 1-3. Legal and Regulatory Capability

	Tribal Authority or Program in Place	Other Jurisdiction Authority	Effect on Loss Reduction	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Zoning Code *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Subdivisions *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Stormwater Management *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Post-Disaster Recovery *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Real Estate Disclosure *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Growth Management *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Site Plan Review *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Environmental Protection *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Flood Damage Prevention *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Emergency Management *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Climate Change *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Other: *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Planning Documents				
General Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Capital Improvement Plan *How often is the plan updated?* _____ *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Floodplain or Watershed Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Stormwater Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No

	Tribal Authority or Program in Place	Other Jurisdiction Authority	Effect on Loss Reduction	Integration Opportunity?
Habitat Conservation Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Economic Development Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Shoreline Management Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Community Wildfire Protection Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Forest Management Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Climate Action Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Comprehensive Emergency Management Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Threat & Hazard Identification & Risk Assessment (THIRA) *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Post-Disaster Recovery Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Continuity of Operations Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Public Health Plan *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No
Other: *Comment:*	Yes/No	Yes/No	Support/Facilitate	Yes/No

Table 1-4. Administrative and Technical Capability

Tribe Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes/No	_____
Engineers or professionals trained in building or infrastructure construction practices	Yes/No	_____
Planners or engineers with an understanding of natural hazards	Yes/No	_____
Staff with training in benefit/cost analysis	Yes/No	_____
Surveyors	Yes/No	_____
Personnel skilled or trained in GIS applications	Yes/No	_____
Scientist familiar with natural hazards in local area	Yes/No	_____
Emergency manager	Yes/No	_____
Grant writers	Yes/No	_____

Table 1-5. Education and Outreach Capability

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe.	Yes/No Insert appropriate information
Do you have any established warning systems for hazard events? • If yes, please briefly describe.	Yes/No Insert appropriate information

Table 1-6. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	Yes/No		Date
Building Code Effectiveness Grading Schedule	Yes/No		Date
Public Protection	Yes/No		Date
Storm Ready	Yes/No		Date
Firewise	Yes/No		Date

Table 1-7. Adaptive Capacity for Climate Change

Criterion	Rating[a]
Technical Capacity	
Tribe-level understanding of potential climate change impacts	High/Medium/Low
Comment:	
Tribe-level monitoring of climate change impacts	High/Medium/Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	High/Medium/Low
Comment:	
Tribe-level capacity for development of greenhouse gas emissions inventory	High/Medium/Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	High/Medium/Low
Comment:	
Participation in regional groups addressing climate risks	High/Medium/Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High/Medium/Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	High/Medium/Low
Comment:	

Criterion	Rating[a]
Identified strategies for adaptation to impacts	High/Medium/Low
Comment:	
Champions for climate action in tribal government	High/Medium/Low
Comment:	
Tribal government support for implementing climate change adaptation strategies	High/Medium/Low
Comment:	
Financial resources devoted to climate change adaptation	High/Medium/Low
Comment:	
Tribal authority over sectors likely to be negative impacted	High/Medium/Low
Comment:	
Public Capacity	
Tribe members' knowledge of and understanding of climate risk	High/Medium/Low
Comment:	
Tribe members' support of adaptation efforts	High/Medium/Low
Comment:	
Tribe members' capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Tribe members' current capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local ecosystems capacity to adapt to climate impacts	High/Medium/Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

1.6 NATIONAL FLOOD INSURANCE PROGRAM PARTICIPATION

__[tribe name]__ __[participates/does not currently participate]__ in the National Flood Insurance Program.

1.7 FUNDING SOURCES

__[tribe name]__ is aware of funding sources to support the implementation of mitigation actions and projects. The tribe has used tribal, private, and non-FEMA federal funds for hazard mitigation projects including the following:

- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects
- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects
- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects
- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects

FEMA mitigation funding, including HMGP, PDM, PA (C-G) and FMAG, have also been used to support hazard mitigation objectives, including the following:

- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects
- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects
- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects
- Project or Activity Name—General discussion of how funds were used for hazard mitigation projects.

Commented [GK3]: Please note that it is OK if the tribe has not used these funding sources. Please just indicate as much as we will adjust the text.

Table 1-8 identifies potential sources of funding to implement mitigation actions in the future.

Table 1-8. Tribe Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Income Generating Businesses	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service	Yes/No- If yes, please specify
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Bureau of Indian Affairs Sponsored Grant Programs	Yes/No
Indian Health Services Grant Programs	Yes/No
U.S. Dept. of Agriculture, Rural Development Agency Grant Programs	Yes/No
U.S. Environmental Protection Agency Grant Programs	Yes/No
U.S. Fire Administration Grant Programs	Yes/No
Tribal Homeland Security Grants	Yes/No
U.S. Army Corps of Engineers	Yes/No
FEMA Stafford Act Grant Programs	Yes/No
Healthy Forest Restoration Action	Yes/No
Other	Yes/No (if yes, please specify)

1.8 GRANT ADMINISTRATION

Grant funding that is received by the Tribe is administered by the INSERT NAME OF POSITION. Grant implementation and project closeout procedures are as follows:

- INSERT GENERAL DESCRIPTION OF IMPLEMENTATION AND CLOSE OUT PROCEDURES.

1.9 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into tribal planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

As this hazard mitigation plan is implemented, Tribal Planning Area Name will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and tribe action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. The capability assessment

identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Plan or Program Name**—Description of how the tribal government will incorporate the data, information or mitigation goals into the plan or program
- **Plan or Program Name**— Description of how the tribal government will incorporate the data, information or mitigation goals into the plan or program
- **Plan or Program Name**—Description of how the tribal government will incorporate the data, information or mitigation goals into the plan or program
- **Plan or Program Name**— Description of how the tribal government will incorporate the data, information or mitigation goals into the plan or program

1.10 NATURAL HAZARD EVENT HISTORY

Table 1-9 lists past occurrences of natural hazards for which specific damage was recorded in Tribe Name. Other hazard events that broadly affected the entire planning area, including Tribe Name, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-9. Past Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$
Insert event type		Date	$

1.11 HAZARD RISK RANKING

Table 1-10 presents a local ranking for Tribe Name of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for the tribe. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 1-10. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1			High/Medium/Low
2			High/Medium/Low
3			High/Medium/Low
4			High/Medium/Low
5			High/Medium/Low
6			High/Medium/Low
7			High/Medium/Low
8			High/Medium/Low
9			High/Medium/Low

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on property and low impact on economy.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, low impact on property and medium impact on economy.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

1.12 TRIBE-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the tribe.

1.12.1 Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: XX
- Number of FEMA-identified Severe-Repetitive-Loss Properties: XX
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: XX

1.12.2 Other Noted Vulnerabilities

The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

1.13 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-11 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-11. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action #
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
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Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#
Insert Action Text *Comment:*				Action#

1.14 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-12 lists the actions that make up the Tribe Name hazard mitigation action plan. Table 1-13 identifies the priority for each action. Table 1-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-12. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action #—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildland fire						
Existing	3, 4, 10	TBD	TBD	High	HMGP, PDM, FMA	Short-term
Action #— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, tsunami, wildland fire						
New and Existing	1, 3, 4, 5, 7, 8, 10	TBD	TBD	Low	Staff Time, General Funds	Ongoing
Action #— Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
New and Existing	1, 5, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action #—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Dam failure, flooding, severe weather, tsunami, sea level rise						
New and Existing	1, 3, 5, 7, 8, 10	TBD	TBD	Low	Staff Time, General Funds	Ongoing
Action #—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following _____.						
Hazards Mitigated: List						
New and Existing	1, 3, 4, 5, 6, 7, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action #— Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire						
Existing	2, 6, 9					
Action #—Description						
Hazards Mitigated: List						
Action #—Description						
Hazards Mitigated: List						
Action #—Description						
Hazards Mitigated: List						
Action #—Description						
Hazards Mitigated: List						
Action #—Description						
Hazards Mitigated: List						

Table 1-13. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
TBD	3	High	High	Yes	Yes	No	Medium	High
TBD	7	Medium	Low	Yes	No	Yes	High	Low
TBD	3	Low	Low	Yes	No	Yes	High	Low
TBD	6	Medium	Low	Yes	No	Yes	High	Low
TBD	7	Medium	Low	Yes	No	Yes	High	Medium
TBD	3	High	Medium	Yes	Yes	No	Medium	High

a. See the introduction to this volume for explanation of priorities.

Table 1-14. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building

a. See the introduction to this volume for explanation of mitigation types.

1.15 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.16 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section

1.17 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

1.17.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Tribe Name Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Tribe Name Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- **Technical Reports and Information—**The following **o**utside resources and references were reviewed:
  - **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.
  - <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.17.2 Process for Annex Development

Insert discussion per instructions.

1.18 ASSURANCES

__[tribe name]__ will comply with all applicable federal statutes and regulations in effect with respect to the periods for which it receives grant funding, including 2 CFR Parts 200 and 3002, and will amend its plan whenever necessary to reflect changes in tribal or federal laws and statutes.

C.3–District Annex Instructions and Template

INSTRUCTIONS FOR COMPLETING SPECIAL PURPOSE DISTRICT ANNEX TEMPLATE

The jurisdictional annex templates for the 2018 Del Norte County Hazard Mitigation Plan update will be completed in three phases. **This document provides instructions for completing the all phases of the template for special purpose districts.**

If your jurisdiction completed and submitted Phase 1 and/or Phase 2, Phase 3 has been added to the end of your document. Any planning team comments, questions or suggestions have been included as blue highlighted notes and/or comments. Any text edits were made with changes tracked for review. Any yellow highlights indicate areas where missing information should be filled in. **If your jurisdiction did not complete Phase 1 or Phase 2**, please complete all phases at this time.

The target timeline for phase completion is as follows:

- **Phase 1** – Jurisdictional profile
  - Deployed: Mid-October, 2017
  - Due: Mid-February, 2018
- **Phase 2** – Capability assessment
  - Deployed: Mid-November, 2017
  - Due: Mid-February, 2018
- **Phase 3** – Risk ranking and action plan development
  - Deployed: Mid-February, 2018
  - Due: Monday, April 2, 2018

Any questions on completing the template should be directed to:

Kristen Gelino
Tetra Tech, Inc.
(917) 426-4594 or (646) 576-4029
E-mail: kristen.gelino@tetratech.com

Special Purpose District Annex:

This document provides instructions for completing **all Phases** of the jurisdictional annex template for special purpose districts. **Templates should be completed by April 2, 2018.** Your completed template should be submitted to:

Kristen Gelino
Tetra Tech, Inc.
(917) 426-4594 or (646) 576-4029
E-mail: kristen.gelino@tetratech.com

A Note About Formatting:

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

Phase 1 Instructions

CHAPTER TITLE

In the chapter title at the top of Page 1, type in the complete official name of your district (e.g. West County Fire Protection District #1, Johnsonville Flood Protection District, etc.). Please do not change the chapter number. Revise only the jurisdiction name.

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, please let the planning team know by inserting a comment into the document.

JURISDICTION PROFILE

Overview

Please provide a brief summary description of your jurisdiction. Please be sure to include:

- the purpose of the jurisdiction,
- the date of inception,
- the type of organization,
- the number of employees,
- the mode of operation (i.e., how operations are funded),
- a description of who the district's customers are,
- an overview of current service area trends, including an approximation of current users/subscribers,
- a summary description of previous growth trends in service area, and anticipated future increase/decrease in services (if applicable),
- an approximation of area served in square miles,
- a geographical decription of the service area, and
- the type of governing body, and who has adoptive authority.

Example Jurisdiction Narrative Profile:

The Johnsonville Community Services District is a special district created in 1952 to provide water and sewer service to the unincorporated area east of the City of Smithburg known as Johnsonville. The District's designated service area expanded throughout the years to include other unincorporated areas of Jones County: Creeks Corner, Jones Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2016, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds.

Provide information similar to the example provided in the box above. This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document.

ASSETS

Please provide an approximate value for the noted areas within the table. Include the sum total value for identified assets for each section in the "Total" line for the section.

Property

Provide an approximate value for the land owned by the District.

Critical Infrastructure and Equipment

List types of equipment an infrastructure **owned by the District** that are used in times of emergency or, if incapacitated, has the potential to severely impact the service area. Provide an approximate **aggregate replacement value** for each type. For water and sewer, include mileage of pipeline under this category.

Critical Facilities

List types of district structures vital to maintain services to the designated service area. Provide an approximate **aggregate replacement value** for each line. The Steering Committee has decided upon the following definition of Critical Facilities for this planning process:

- A local (not state or federal) facility in either the public or private sector that is critical to the health and welfare of the population and that is especially important following hazard events, including but not limited to the following:
  - Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water-reactive materials
  - Hospitals, nursing homes, and housing facilities likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a natural hazard event
  - Mass gathering facilities that may be utilized as evacuation shelters
  - Infrastructure such as roads, bridges and airports that provide sources for evacuation before, during and after natural hazard events
  - Police stations, fire stations, government facilities, vehicle equipment and storage facilities, hardware stores and emergency operation centers that are needed for response activities before, during and after a natural hazard event
  - Public and private utility facilities that are vital to maintaining and restoring normal services to damaged areas before, during and after natural hazard events.

Please use this definition as a guideline when selecting critical facilities the District owns.

SAMPLE COMPLETED TABLE – SPECIAL DISTRICT ASSETS

Asset	Value
Property	
11.5 Acres	$5,750,000
Critical Infrastructure and Equipment	
Total length of pipe 40 miles ($1.32 million per mile X 40 miles)	$52,800,000
4 Emergency Generators	$250,000
Total:	**$53,050,000**

Critical Facilities	
2 Administrative Buildings	$2,750,000
4 Pump Station Buildings	$377,000
Total:	**$3,127,000**

Phase 2 Instructions

If your jurisdiction participated in a previously approved hazard mitigation plan, we have transferred relevant content to the Phase 2 portion of your annex. All pre-populated content should be reviewed for accuracy and completeness.

CAPABILITY ASSESSMENT

Planning and Regulatory Capability

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements related to hazard mitigation. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction. Please provide the date of last update and any comments as appropriate. A few examples follow:

- **District Design Standards**—Last updated 2010.
- **Capital Improvement Program**—Updated and approved annually, covers 5 year timeframe.
- **Emergency Operations Plan**—Last updated 2000.
- **Facility Maintenance Manual**—Last updated 1990.
- **California Building Code**—Last updated 2016.
- **California State Division of State Architects—**Review and approval of all building and site design features is required prior to construction.
- **Habitat Conservation Plan**—All development impacting critical habitat must meet federal and state requirements pertaining to the protection of endangered species.

Fiscal, Administrative and Technical Capabilities

Fiscal Capability

Complete the table titled “Fiscal Capability” by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your eligibility for this resource.

Administrative and Technical Capability

Complete the table titled “Administrative and Technical Capability” by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?”. If yes, then enter the department and position title in the right-hand column. If you have contract support staff with these capabilities, you can still answer “Yes.” Indicate in the department column that this resource is provided through contract support.

Education and Outreach Capabilities

Complete the table titled “Education and Outreach” to indicate your jurisdiction’s capabilities and existing efforts regarding natural hazard mitigation education and outreach.

Adaptive Capacity for Climate Change

Consider the climate change impact concerns identified for the planning area:

- Reduced snowpack
- Increased wildfires
- Sea level rise and inland flooding
- Threats to sensitive species (e.g. coho salmon)
- Loss in agricultural productivity (e.g. forestry, wine grapes, nursery products, dairy)
- Public health and safety.

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating that your jurisdiction's capacity for each listed criterion as follows:

- **High**—The capacity exists and is in use.
- **Medium**—The capacity may exist, but is not used or could use some improvement.
- **Low**—The capacity does not exist or could use substantial improvement.
- **Unsure**—Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team and that you review the results of the other capability assessment tables before completing.

INTEGRATION WITH OTHER PLANNING INITIATIVES

The goal of plan integration is to ensure that the potential impact of hazards is considered in planning for future development. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment, identify all plans and programs that have already been integrated with the goals and recommendations of the hazard mitigation plan, and those that offer opportunities for future integration.

Existing Integration

Provide a brief description of how the plan or ordinance is integrated. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects can help mitigate potential hazards. The District will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Emergency Operations Plan**—The results of the risk assessment were used in the development of the emergency operations plan.
- **Facilities Plan**—The results of the risk assessment and mapped hazard areas are used in facility planning for the district. Potential sites are reviewed for hazard risks and appropriate mitigation measures are considered in building and site design.

Opportunities for Future Integration

List any plans or program that offer the potential for future integration and describe the process by which integration will occur. Examples follow:

- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—The District does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the mitigation goals and objectives identified in the mitigation plan.

Consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Please add any such programs to the integration discussion and provide a brief description of how these program manage (or could be adapted to manage) risk from hazards.

Phase 3 Instructions

If your jurisdiction participated in a previously approved hazard mitigation plan, we have transferred relevant content to the Phase 3 portion of your annex. All pre-populated content should be reviewed for accuracy and completeness.

JURISDICTION-SPECIFIC NATURAL EVENT HISTORY

In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Please refer to the table below that lists Presidential Disaster Declarations for the County. We recommend including most large-scale disasters, unless you know that there were no impacts to your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, please refer to the NOAA storm events database included in the tool kit. We recommend conducting a search for the name of your jurisdiction or those jurisdictions in your service area in order to identify events with known impacts. Other potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Resident input.

If you do not have estimates for dollars of damage caused, please list "Not Available" in the appropriate column or simply list a brief description of the damages (e.g. Power out to 35,000 customers for 24 hours). Please note that tracking such damages, is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Presidential Disaster Declarations for Del Norte County

Type of Event	FEMA Disaster #	Declaration Date
Tsunami Waves	DR-1968	4/18/2011
Severe Storms, Flooding, Mudslides, And Landslides	DR-1628	2/3/2006
Hurricane Katrina Evacuation	EM-3248	9/13/2005
Severe Winter Storms And Flooding	DR-1203	2/9/1998
Severe Storms, Flooding, Mud And Landslides	DR-1155	1/4/1997
Severe Winter Storms, Flooding, Landslides, Mud Flows	DR-1044	1/10/1995
The El Nino (The Salmon Industry)	DR-1038	9/13/1994
Severe Winter Storm, Mud & Land Slides, & Flooding	DR-979	2/3/1993
Severe Storms & Flooding	DR-758	2/21/1986
Coastal Storms, Floods, Slides & Tornadoes	DR-677	2/9/1983
Severe Storms & Flooding	DR-329	4/5/1972
Severe Storms & Flooding	DR-283	2/16/1970
Heavy Rains & Flooding	DR-183	12/24/1964
Seismic Sea Wave	DR-169 [a]	4/1/1964
Flood Due To Broken Dam	DR-161 [a]	12/21/1963
Severe Storms, Heavy Rains & Flooding	DR-145 [a]	2/25/1963
Severe Storms & Flooding	DR-138 [a]	10/24/1962
Floods	DR-122 [a]	3/6/1962
Fire (Los Angeles County)	DR-119 [a]	11/16/1961
Heavy Rainstorms & Flood	DR-82 [a]	4/4/1958
Forest Fire	DR-65 [a]	12/29/1956
Flood	DR-47 [a]	12/23/1955
Flood & Erosion	DR-15[a]	2/5/1954

a. Statewide declaration

Note: EM = Emergency Declaration; DR = Disaster Declaration

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy.

Tetra Tech has developed a draft risk ranking using the parameters outlined below and based in part on risk ranking in the previous plan (if applicable) for each planning partner. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in your template and include what you believe the rank should

be and why. For example, drought was ranked as low; however, the jurisdiction is a water supply district, so you believe it should be ranked as high.

Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."**

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

Risk Ranking Methodology

Review Risk Ranking in Template

Review the hazard risk ranking information that Tetra Tech has provided. The hazard with the highest risk rating is listed at the top of table titled "Hazard Risk Ranking" in your template and was given a rank of 1; the hazard with the second highest rating is listed second with a rank of 2; and so on. Two hazards with equal risk ratings were given the same rank. "High," Medium," and "Low" assignments were given for each hazard of concern based on the total score (probability x impact). It is important to note, that this is determined by the scores rather than assigning a certain number of hazards to each category.

When reviewing the risk ranking results, it is important to remember that this exercise is about categorizing hazards into broad levels of risk (e.g. high, medium, low). It is not an exercise in precision.

Review Risk Ranking in Loss Matrix

The following sections discuss the methodology used to develop the results included in your template. Please refer to the risk assessment results provided for more information.

Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is generally based on past hazard events in an area, although weight can be given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total ***population exposed*** in your service area to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:

  - High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the population is exposed to a hazard (Impact Factor = 0)

- **Property**—Values are assigned based on the percentage of the total ***district assets exposed*** to the hazard event:

  - High—25 percent or more of the total replacement value of assets is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the total replacement value of assets is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the total replacement value of assets is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)

- **Operations**—Impact on operations is assessed based on estimates of how long it will take your jurisdiction to become 100-percent operable after a hazard event. The estimated functional downtime for critical facilities has been subjectively assigned an impact as follows:

  - High—Functional downtime of 365 days or more (Impact Factor = 3)
  - Medium—Functional downtime of 180 to 364 days (Impact Factor = 2)
  - Low—Functional downtime of 180 days or less (Impact Factor = 1)
  - No impact—No functional downtime is estimated from the hazard (Impact Factor = 0).

Risk Rating for Each Hazard

A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

This is the number that is shown in the risk ranking table in your template. Generally, score of 30 or greater receive a “high” rating, score between 15 and 30 receive a “medium” rating, and score of less than 15 receives a “low” rating.

JURISDICTION-SPECIFIC VULNERABILITIES

We would strongly encourage you to review the results of the risk assessment included in the tool kit, your jurisdiction’s natural events history, and any relevant public comments/input and develop a few sentences that discuss specific risks. You do not need to develop a sentence for every single parameter, but review the results and identify a few issues you would like to highlight. For example:

- One of the District’s wastewater treatment plants is located in an area likely to be permanently inundated by sea level rise by 2030.

- Three of the District's five fire stations are located in very high landslide risk areas.
- The vast majority of the service area for the district is located on high liquefaction potential soils, which has the potential to severely disrupt service for an extended period following even a moderate earthquake event.
- The District headquarters is more likely than not to be extensively damaged during a Smithburg fault M7.0 event.

In addition, please list any noted vulnerabilities in your jurisdiction related to hazard mitigation that may not be apparent from the risk assessment and other information provided. This may include things such as the following:

- An area of the community that frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, that is not equipped with a generator.
- A neighborhood that has the potential to have ingress and egress cut off as the result of a hazard event, such as a flood or earthquake (e.g. bridge only access).

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your mitigation strategy. The items you list in this section should cross-walk back to the mitigation action that you have selected. Tetra Tech has inserted a few items in this section to get you started. In addition, two examples are shown in the table below.

Noted Vulnerability	Example Mitigation Action
One of the District's wastewater treatment plants is located in an area likely to be permanently inundated by sea level rise by 2030.	Conduct a detailed assessment of the wastewater treatment plant vulnerability to sea level rise. Determine adaptation actions that can be implemented in the near- and long-term.
A critical facility, such as a police station, that is not equipped with a generator.	Unsure all critical facilities within the District have backup power generation capabilities. Priority facilities include: • Main street pump station • Old Oak subdivision pump station.

STATUS OF PREVIOUS PLAN ACTIONS

Please note that this section only applies to jurisdictions that are conducting updates to previously approved hazard mitigation plans. If your jurisdiction has not previously participated in an approved plan, this section will not appear in your annex template. Also, please note that a handout with this information was distributed at the February Steering Committee meeting so work may have already begun on this portion of phase 3.

All action items identified in prior mitigation planning efforts must be reconciled in this plan update. Action items must all be marked as ONE of the following; check the appropriate box (place an X) and provide the following information:

- **Completed—**If an action was completed during the performance period of the prior plan, please check the appropriate box and provide a date of completion in the comment section. If an action has been initiated and is an ongoing program (e.g. annual outreach event), you may mark it as completed and note that it is ongoing in the comments. When removing such actions from your action plan, please consider including them in the existing integration section above. If you have an action that addresses an ongoing program you would like to continue to include it in your action plan, please see the Carried Over to Plan Update section below.
- **Removed—**If action items are to be removed because they are no longer feasible, a reason must be given. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding

for an action is no longer available. Place a comment in the comment section explaining why the action is no longer feasible or barriers that prevented the action from being implemented (e.g., "Action no longer considered feasible due to lack of political support."). If the wording and/or intent of a previously identified action is unclear, this can be a reason for removal. A change in community priorities may also be a reason for removal and should be discussed in the comments.

- **Carried Over to Plan Update—**If an action is in progress, ongoing or has not been initiated and you would like to carry it over to the plan update, please check the "Check if Yes" column under "Carried Over to Plan Update." Selecting this option indicates that the action will be included in the mitigation action plan for the 2018 plan. If you are carrying over an action to the plan update, please include a comment describing any action that has been taken or why action was not taken (specifically, any barriers or obstacles that prevented the action from moving forward or slowed progress) The last column "Enter Action #" will be addressed when you develop your actions plan in the following sections. You will need to revisit it after completing the updated action plan in phase 3.

Please ensure that you have provided a status and a comment for each action.

HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

This section is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan. All of the work that you have done thus far should provide you with a plethora of ideas for actions. With this in mind, we recommend that you review the following and develop a list of potential actions:

Wording Your Action Descriptions:

Descriptions of your actions need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the action's scope and impact. The following are typical descriptions for an action plan action:

- **Action 1—**Address repetitive-loss issues. Through targeted mitigation, acquire, relocate or retrofit the nine pump stations that have been repetitively damaged.
- **Action 2—**Perform a non-structural, seismic retrofit of the administrative building.
- **Action 3—**Develop a schedule to underground overhead powerlines.

- **Capability Assessment Section of Annex—**Review the Planning and Regulatory Capability table, the Fiscal Capability table, the Administrative and Technical Capability table, and the Education and Outreach table.
  - For any capability that you indicated that you did not have, ask yourself – should we have this capability? If yes, consider including an action to develop/acquire the capability.
  - Example: Ensure a staff person is trained in the use of FEMA's benefit-cost analysis software.
  - Review the Legal and Regulatory capabilities. If you have not reviewed and updated a capability in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment (Note: actions such as this should also be identified in the opportunities for future integration section). Also, consider including projects or actions that have been identified in other plans and programs such as Capital Improvement Plans, Strategic Plans, etc. as actions in this plan.
  - For any capability that you indicated you do have, consider how this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.

- **Adaptive Capacity for Climate Change Section of this Annex**—Consider your responses to this section. For those criterion that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog). For those criterion you listed as

high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity. For those criterion that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices).

- **Opportunities for Future Integration Section in this Annex**—Review the items you identified in this section. Consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.
- **Jurisdiction-Specific Vulnerabilities Section in this Annex—**Review the items that you have identified in this section and consider actions that will help reduce these vulnerabilities (see mitigation best practices catalog).
- **Mitigation Best Practices Catalog**—A catalog that includes FEMA and other agency identified best practices, steering committee and other stakeholder recommendations was developed as part of the plan development process and included in your tool kit. Review the catalog and identify those actions that your jurisdiction should consider including in its action plan.
- **Public Input**—Review input received during the process, specifically the public survey results included in your toolkit.
- **Prior Mitigation Planning Efforts**—If your jurisdiction participated in a previous hazard mitigation plan, please be sure to remember to include any actions that were identified as "carry over" actions. Once you have carried them over, return to the Status of Previous Actions table and record the new action number (see discussion below).

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) grants (see fact sheet provided in toolkit). If you have actions that are not HMGP, PDM or FMA grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- **You must identify at least one true mitigation action (i.e. not a preparedness or response action) that is clearly defined and actionable for hazards ranked as "high" or medium."**

Recommended Actions

We recommend that every planning partner strongly consider the following actions. The specifics of these actions should be adjusted as needed for the particulars of each jurisdiction. You will note that three of these actions have been prepopulated in your annex template. These three actions should be included in every annex and should not be removed.

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.
- Integrate the hazard mitigation plan into other plans, ordinances and programs within the community.
- Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.
- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.

- Develop and/or update plans that support or enhance continuity of operations following disasters.
- Identify and pursue strategies to increase adaptive capacity to climate change.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

Complete the Table

Complete the table titled "Hazard Mitigation Action Plan Matrix" for all the actions you have identified and would like to include in the plan:

Action Item Numbering:

- Please use the following action item numbering conventions:
  - Crescent City Harbor District—CCHD-1
  - Crescent Fire Protection District—CFPD-1
  - Gasquet Community Services District—GCSD-1
  - Klamath Community Services District—KCSD-1
  - Smith River Fire Protection District—SRFPD-1
  - Smith River Community Services District—SRCSD-1

- Enter the action number and description .
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate.
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department, please ensure that it is clear who the lead agency will be and list supporting agencies in the appropriate column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium" or "Low" as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table below for project eligibility for FEMA's hazard mitigation assistance grant program.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or ongoing (a continual program)

Eligible Activities	HMGP	PDM	FMA
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√

Eligible Activities	HMGP	PDM	FMA
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

Notes: HMGP = Hazard Mitigation Grant Program; PDM = Pre-Disaster Mitigation; FMA = Flood Mitigation Assistance

* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

**Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Source: https://www.fema.gov/hazard-mitigation-assistance-mitigation-activity-chart

Please see the table below for an examples of some of the recommended actions above:

Example Action Plan Matrix							
Applies to new or existing assets	**Hazards Mitigated**	**Objectives Met**	**Lead Agency**	**Support Agency**	**Estimated Cost**	**Sources of Funding**	**Timeline**
EX-1— Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing structures that have experienced repetitive losses.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	3, 4, 10			High	HMGP, PDM, FMA	Short-term
EX-2—Integrate the hazard mitigation plan into other plans, ordinances and programs within the community.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 7, 8, 10			Low	Staff Time, General Funds	Ongoing
EX-3—Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.							

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	4, 8	Emergency Management		Medium	Staff Time, General Funds	Short-term
EX-4—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-5—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 5, 8	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-6—Develop a post-disaster recovery plan and a debris management plan.							
Existing	All Hazards	9	Emergency Management		Medium	EMPG	Long-term
EX-7—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
Existing	Dam failure, Flooding, Landslide, Severe weather, Wildland fire	2, 6, 9	Operations		Medium	HMGP, PDM	Short-term

Prioritization of Mitigation Actions

Complete the information in the table titled "Mitigation Strategy Priority Schedule" as follows:

- **Action #**—Indicate the action number from the previous annex table (Hazard Mitigation Action Plan Matrix).
- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter "High," "Medium" or "Low" as follows:
  - High: Action will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Action will have a long-term impact on the reduction of risk exposure to life and property, or action will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the action are difficult to quantify in the short term.
- **Costs**—Enter "High," "Medium" or "Low" as follows:

- High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed action.
- Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- Low: Possible to fund under existing budget. Action is or can be part of an existing ongoing program.

If you know the estimated cost of a action because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on HMGP, PDM and FMA.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

This prioritization is a simple way to determine that your identified actions meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM /FMA action grants. The prioritization will identify any actions whose probable benefits will not exceed the probable costs. Those actions identified as high-priority grant funding actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities. A note indicting so should be inserted and a rationale should be provided.

Please see the example below based off the recommended actions:

Table 0-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Action Grant-Eligible?	Can Action Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EX-1	3	High	High	Yes	Yes	No	Medium	High
EX-2	7	Medium	Low	Yes	No	Yes	High	Low
EX-3	2	Low	Medium	No	No	Maybe	Low	Low
EX-4	10	Low	Low	Yes	No	Yes	High	Low
EX-5	3	Low	Low	Yes	No	Yes	High	Low
EX-6	1	Medium	Medium	Yes	Yes	No	Medium	High
EX-7	3	High	Medium	Yes	Yes	No	Medium	High

Analysis of Mitigation Actions

Complete the table titled "Analysis of Mitigation Actions" summarizing the mitigation actions by hazard of concern and the following eight mitigation types. Please note that an action can be more than one mitigation type:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.

- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

Please see the example below based off the recommended actions, but please note that these recommendations are heavy on generalized actions on the prevention spectrum and light in other areas and specificity. Planning partners should aim to identify at least one action in each category (although this is not required) and should make sure there is at least one action to address "high" and "medium" ranked hazards:

Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Dam Failure	EX-2, 3, 4, 5	EX-1	EX-4		EX-7			EX-3, 4, 6
Drought	EX-2	EX-1	EX-4					EX-3, 4, 6
Earthquake	EX-2, 3, 4, 5	EX-1	EX-4		EX-7			EX-3, 4, 6
Flood	EX-2, 3, 4, 5	EX-1	EX-4		EX-7			EX-3, 4, 6
Landslide	EX-2, 3, 4, 5	EX-1	EX-4		EX-7			EX-3, 4, 6
Severe weather	EX-2, 3, 4, 5	EX-1	EX-4		EX-6, 7			EX-3, 4, 6
Wildland fire	EX-2, 3, 4, 5	EX-1	EX-4		EX-7			EX-3, 4, 6

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. Please note that this section is optional.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. Please note that this section is optional.

REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

Existing Reports, Plans, Regulatory Tools and Other Resources

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but please be sure to update and enhance any descriptions. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

Staff and Local Stakeholder Involvement in Annex Development

This section should describe in general terms the process by which the annex was developed. Please include general discussion with a focus on who was involved and how the action plan was developed. An example is included below.

> This annex was developed over the course of several months with input from many district departments including operations, finance, and capital planning. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. A action development meeting was held on February 20, 2018 and was attended by representatives from all previously listed department as well as the General Manager and representatives from the Board of Directors. Once actions had been identified and compiled in the annex, a draft was internally circulated for comment.

NEXT STEPS

After all jurisdictions have submitted their annexes, the draft plan will be submitted for public comment. Following the public comment period and any revisions responsive to public comment, the plan will be submitted to the California Governor's Office of Emergency Services (Cal OES) for review. After their review and approval, Cal OES will submit the plan to FEMA Region IX for plan review and approval. At that point planning partners will be asked to begin making preparations to formally adopt the plan. Each participating planning partner must have the governing board of their jurisdiction adopt via resolution or ordinance. Once FEMA has reviewed the plan and issued an approved pending adoption (APA) notice, planning partners will be asked to go forth and adopt the plan. Once adopted, planning partners will submit adoption information to Tetra Tech, who will submit the proof of adoption to FEMA. Once such adoption has been received, FEMA will issue final approval via a letter for those planning partners who have adopted the plan. It is very important to understand that approval is not final until proof of adoption has been received by FEMA and they have issued a letter specifically naming your jurisdiction. More information on the review and approval process, along with adoption support materials, will be provided at a later date.

1. DISTRICT NAME

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

1.2 JURISDICTION PROFILE

1.2.1 Overview

Insert Narrative Profile Information, per Instructions. The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.

For fire districts please be sure to include the following sentence (Non-fire Special Purpose Districts may delete the sentence):

The District participates/does not participate in the Public Protection Class Rating System and currently has a rating of #.

1.2.2 Service Area and Trends

The district serves a population of _ population_. Its service area covers an area of _area_.

Insert summary description of service trends.

1.2.3 Assets

Table 1-1 summarizes the critical assets of the district and their value.

Table 1-1. Special Purpose District Assets

Asset	Value
Property	
number acres of land	$_value_
Critical Infrastructure and Equipment	
description	$_value_
description	$_value_
description	$_value_
description	$_value_
description	$_value_
Total:	*$_value_*
Critical Facilities	
description	$_value_
description	$_value_
description	$_value_
description	$_value_
description	$_value_
description	$_value_
Total:	*$_value_*

1.3 CAPABILITY ASSESSMENT

Upon completion, the capability assessment was reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan and are identified as Community Capacity Building mitigation actions in the Analysis of Mitigation Actions table in Section 1.9.

1.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 1-2 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

Table 1-2. Planning and Regulatory Capability

	Date of Most Recent Update	Comment
Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____

1.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 1-3. Administrative and technical

capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 1-4.

Table 1-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service	Yes/No
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Federal Grant Programs	Yes/No
Other	Yes/No (if yes, please specify)

Table 1-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes/No	Insert appropriate information
Engineers or professionals trained in building or infrastructure construction practices	Yes/No	Insert appropriate information
Planners or engineers with an understanding of natural hazards	Yes/No	Insert appropriate information
Staff with training in benefit/cost analysis	Yes/No	Insert appropriate information
Surveyors	Yes/No	Insert appropriate information
Personnel skilled or trained in GIS applications	Yes/No	Insert appropriate information
Scientist familiar with natural hazards in local area	Yes/No	Insert appropriate information
Emergency manager	Yes/No	Insert appropriate information
Grant writers	Yes/No	Insert appropriate information
Other	Yes/No	Insert appropriate information

1.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 1-5.

Table 1-5. Education and Outreach

Criterion	Response
Do you have a Public Information Officer or Communications Office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	Yes/No Insert appropriate information
Do you utilize social media for hazard mitigation education and outreach? • If yes, please briefly describe	Yes/No Insert appropriate information

Criterion	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	Yes/No Insert appropriate information
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	Yes/No Insert appropriate information
Do you have any established warning systems for hazard events? • If yes, please briefly describe	Yes/No Insert appropriate information

1.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 1-6 summarizes the District's adaptive capacity for climate change.

Table 1-6. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High/Medium/Low
Comment:	
Jurisdiction-level monitoring of climate change impacts	High/Medium/Low
Comment:	
Technical resources to assess proposed strategies for feasibility and externalities	High/Medium/Low
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	High/Medium/Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	High/Medium/Low
Comment:	
Participation in regional groups addressing climate risks	High/Medium/Low
Comment:	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High/Medium/Low
Comment:	
Identified strategies for greenhouse gas mitigation efforts	High/Medium/Low
Comment:	
Identified strategies for adaptation to impacts	High/Medium/Low
Comment:	
Champions for climate action in local government departments	High/Medium/Low
Comment:	
Political support for implementing climate change adaptation strategies	High/Medium/Low
Comment:	
Financial resources devoted to climate change adaptation	High/Medium/Low
Comment:	
Local authority over sectors likely to be negative impacted	High/Medium/Low
Comment:	

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents knowledge of and understanding of climate risk	High/Medium/Low
Comment:	
Local residents support of adaptation efforts	High/Medium/Low
Comment:	
Local residents' capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local economy current capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local ecosystems capacity to adapt to climate impacts	High/Medium/Low
Comment:	

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

1.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital facilities planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation.

1.4.1 Existing Integration

In the performance period since adoption of the previous hazard mitigation plan, District Name made progress on integrating hazard mitigation goals, objectives and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

Resources listed in Section 1.12 were used to provide information on hazard events and local capabilities within the jurisdiction.

1.4.2 Opportunities for Future Integration

As this hazard mitigation plan is implemented, District Name will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in Volume 1. New opportunities for integration also will be identified as part of the annual progress report. The capability assessment identified the following plans and programs that do not currently integrate goals or recommendations of the hazard mitigation plan but provide opportunities to do so in the future:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-7 lists past occurrences of natural hazards for which specific damage was recorded in District Name. Other hazard events that broadly affected the entire planning area, including District Name, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-7. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Damage Assessment
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____

1.6 HAZARD RISK RANKING

Table 1-8 presents a local ranking for District Name of all hazards of concern for which Volume 1 of this hazard mitigation plan provides complete risk assessments. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation action development targets those hazards with high and medium rankings.

Table 1-8. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	_____	_____	High/Medium/Low
2	_____	_____	High/Medium/Low
3	_____	_____	High/Medium/Low
4	_____	_____	High/Medium/Low
5	_____	_____	High/Medium/Low
6	_____	_____	High/Medium/Low

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
7	_____	_____	High/Medium/Low
8	_____	_____	High/Medium/Low
9	_____	_____	High/Medium/Low

a. Based on the Big Lagoon Bald Mountain M7.9 scenario
b. Severe weather is assessed more qualitatively than other hazards. Assumptions for risk ranking include high probability, medium impact on people, low impact on property and low impact on economy.
c. Based on Very High and High Fire Severity Zones.
d. Based on 1 percent-annual-chance flood zone (otherwise known as the special flood hazard area)
e. Based on Very High and High Landslide Susceptibility Zones
f. Drought is assessed more qualitatively than other hazards. Generally, drought does not cause injury or death to people or result in property damage. Assumptions for risk ranking include high probability, no impact on people, low impact on property and medium impact on economy.
g. Based on the combined dam inundation areas of Copco No. 1, Iron Gate and Trinity dams.
h. Based on 4 feet of Sea Level Rise
i. Based on composite possible tsunami events

1.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. The following issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in Section 1.9.

1.8 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-9 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-9. Status of Previous Plan Actions

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Enter Action #
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Enter Action #
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				
Insert Action Text				Action#
Comment:				

1.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-10 lists the actions that make up the District Name hazard mitigation action plan. Table 1-11 identifies the priority for each action. Table 1-12 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-10. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action #—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.							
Existing	Earthquake, flooding, landslide, tsunami, wildland fire	3, 4, 10	TBD	TBD	High	HMGP, PDM, FMA	Short-term
Action #—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.							
New and Existing	Dam failure, drought, earthquake, flooding, landslide, severe weather, tsunami, wildland fire	1, 5, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action #—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
Existing	Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildland fire	2, 6, 9	TBD		Medium	HMGP, PDM	Short-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							
Action #—Description							

Table 1-11. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
TBD	3	High	High	Yes	Yes	No	Medium	High
TBD	3	Low	Low	Yes	No	Yes	High	Low
TBD	3	High	Medium	Yes	Yes	No	Medium	High

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]

a. See the introduction to this volume for explanation of priorities.

Table 1-12. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]							
	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
_____								
_____								
_____								
_____								
_____								
_____								
_____								
_____								
_____								

a. See the introduction to this volume for explanation of mitigation types.

1.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.11 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section

1.12 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

1.12.1 Existing Reports, Plans, Regulatory Tools and Other Resources

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- **Hazard Mitigation Plan Annex Development Tool-kit**—The tool-kit was used to support the development of this annex including past hazard events, noted vulnerabilities, risk ranking and action development.

1.12.2 Staff and Local Stakeholder Involvement in Annex Development

Insert discussion per instructions.

Appendix D. Big Rock Community Services District Action Plan

4.2 Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

In order to identify and select mitigation actions to support the mitigation goals, each hazard identified in Section 3.4 was evaluated. Only those hazards that were determined to be a priority hazard were considered further in the development of hazard-specific mitigation actions.

The priority Hazards are:

Earthquake

Wildfire

Flood

Landslides

Severe Weather

Hazardous Materials

Once the hazards priority had been established for development of specific mitigation actions, the Planning Team and planning partners jointly evaluated viable mitigation options that support identified goals. The following considerations reflect general mitigation categories that were referenced from the community rating system to frame options for action:

Prevention (required to be evaluated)

Property protection

Structural projects

Natural resource protection

Emergency services

Public information

Lists of possible mitigation actions were taken from several sources including the expired 2011 Crescent City/Del Norte County Hazard Mitigation Plan that catalogued mitigation alternatives by hazard and EPA's Guide on Hazard Mitigation for Natural Disasters for Water and Wastewater Utilities (EPA, 2016).

4.3 Mitigation Action Plan

Requirement §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

This action plan was developed considering previous mitigation strategies contained in the BRCSD's Annex Plan and general mitigation actions taken from the 2011 Crescent City/Del Norte County Hazard Mitigation Plan. Input from the Project Management Team and feedback provided by the general public during four Public Outreach meetings proved to be vital in this case. An action plan was developed to reduce the risks to and vulnerabilities of people, property, infrastructure, and natural resources to future disasters. The action plan summarizes who is responsible for implementing each of the prioritized actions, as well as when and how actions will be implemented. Each action summary provides discussion and a benefit-cost review, the latter of which was designed to satisfy regulatory provisions of the Disaster Mitigation Act.

The Project Management Team and BRCSD Board of Directors/Trustees realize that new needs and priorities might arise at some future point as the result of an actual disaster or other circumstance. The District therefore reserves the right to support new actions, when deemed necessary, as long as they conform to the approved overall goals of this LHMP. Further, it should be clarified that actions presented in this Mitigation Action Plan are subject to further review and refinement; analyses of alternatives; and possible reprioritization in view of funding availability or other valid considerations. The Big Rock CSD is not obligated by this document to implement any or all of these projects. Rather, this mitigation strategy represents the desires of the community and associated neighborhoods included within the Hiouchi Planning Area to mitigate risks to the interests and vulnerabilities from identified hazards.

4.3.1 Mitigation Actions

The following section details mitigation actions,. Each mitigation action addresses certain hazards, provides background regarding the associated issues, suggests project benefits, assigns implementation responsibility, estimates cost, identifies potential funding sources, and proposes a completion schedule.

BRCSD 1—Replace the 100,000-gallon Redwood water storage tank with a bolted steel tank mounted on a granite shelf, and increase its working capacity to 200,000 gallons in order to accommodate new water service obligations. Upgrade the existing SCADA (Supervisory Control And Data Acquisition**) system. Retain the existing on-site 30 kW generator and propane fuel field. Concurrently stabilize a section of Hiouchi Mountain that is threatened by catastrophic seismic activity, and add an emergency communications capability. Improve vehicle access to the site. Acquire ownership of 6.83 acres to secure all hillside facilities and the access point against terrorism/vandalism.**

Hazards Addressed: Wildfire, Earthquake, Landslide, Severe Weather, Hazardous Materials

Issue/Background: The District's 100,000-gallon water storage tank is located on a steep hillside with grades of 35% near the toe of the hill north of town and between 50% to 70% at and above the water tank. The tank was constructed in 1971 in accordance with California Building Code that did not specify mandatory requirements at the time. Construction of the tank, foundation and pad was completed prior to the 1975 lateral force requirement additions and the amendment of the Uniform Building Code in 1994 that included seismic safety provisions. In addition to the reduced code standards that defined the tank installation project in 1971, the tank site itself now presents a serious hazard to the community. The mountainside upon which the tank is constructed is quite steep and unstable. To place the tank on level ground, it was constructed on a built-up fill prism.

The prism sits on top of approximately ten (10) to fifteen (15) feet of loosely consolidated material, which is underlain by ultramafic rock. Significant water seeps from the hillside above the tank are eroding the soils around the tank foundation to the extent that the fill prism would break loose from its rock base and slide down the hillside in a magnitude M5.5 earthquake-generated landslide, carrying with it the entire facility that includes the storage tank, pump house, generator and propane fuel field, antenna tower, cyclone fencing, and pipeline infrastructure. This area often experiences severe storms that can bring 18 inches of rain over three days contributing to extensive erosion and accelerated deterioration of the tank pad's stability.

Increased storage tank volume is needed based on an engineering evaluations of the water system that demonstrated the need for additional storage to support fire protection and emergency supplies should the District's intake system fail (GHD, 2016). In addition, the District annexed the Jedediah Smith Redwoods State Park and Redwood National Park into its jurisdiction in 2010. The two parks are currently merging their resources into one entity via a major redevelopment project that will attract another 20,000 visitors every year to Hiouchi. They have asked the District for a permanent water connection, which will require more than 2 million gallons of water per year plus increased water storage capability. A fire hydrant will be installed to mitigate the threat of fire inside the consolidated park system. The current Hillside Stabilization Plan (HSP) accommodates these requests.

Benefits: This mitigation action will result in a project (HSP) to install a 200,000-gallon replacement water storage tank on a new pedestal that is tied to bedrock, protected by a retaining wall, and constructed to modern seismic standards. The HSP will mitigate the risk that the tank, supporting pedestal, associated pipeline and valve infrastructure, and hillside mixed with trees and granite rocks will slide off of Hiouchi Mountain causing extensive damage to a populated neighborhood and potential loss of life.

Implementation: The Big Rock CSD's Board has the lead for implementation of this mitigation action, and would be responsible for approving contracts for the design and construction of the new tank.

Estimated Cost : $2.9 million

Potential Funding: Grants through FEMA, DWR, and SWRCB

Schedule: Complete Construction by November 2018

BRCSD 2—Install a complete emergency communications system along with a 70-ft antenna tower for emergency HF/VHF/UHF and Simplex communications. The tower will feature a microwave antenna to perform SCADA operations.

Hazards Addressed: Wildfire, Earthquake, Flood, Landslide, Severe Weather, Hazardous Materials

Issue/Background: The first problem is that reliable SCADA system operations on an around-the-clock basis are dependent upon uninterrupted, line-of-sight microwave communication between the Big Rock CSD's main pump house on the north bank of the Smith River and both water storage tank facilities located on the south side of Hiouchi Mountain. These critical communication nodes are about 0.7 mile distant from each other. Tall forest trees growing even taller in-between those

locations are beginning to interrupt the microwave connection, thereby causing an average loss of 120,000 gallons of potable water per month due to tank fill signals not reaching the pumping facility. Environmental constraints make it impossible for the District to remove the problematic trees or connect the sites with electrical lines. This steadily worsening situation is unacceptable to the residents of Hiouchi, the Special District, and the State Water Resources Control Board (SWRCB) that regulates the BRCSD's municipal water system via a permanent license. The proposed 70-foot antenna tower is the sole and best solution at this juncture, for it would remain effective for decades to come.

The second issue is that tall mountains surround the somewhat isolated Hiouchi Planning Area thereby narrowing the range of disaster mitigation possibilities for some hazards. During hazard events anywhere, effective communications typically prove to be indispensable for efficient and effective emergency responses, resource management, and positive outcomes. Certain potential hazards would render the existing communications systems between Hiouchi and the Crescent City area ineffective, especially during and after a Cascadia Event that most likely would neutralize all communications nodes inside the Pacific Coastal Zone. Exclusive reliance upon OASIS for disaster relief would be unwise in the context of worst-cast planning. A catastrophic disaster event in Del Norte County, for instance, could neutralize the fixed OASIS terminal at the Emergency Operations Center in Crescent City.

The Planning Team and the BRCSD's Board of Directors/Trustees agreed that a reliable backup emergency communications option via the Camp 6 repeater and a backup relationship with the Josephine County Emergency Center (JCEC) to the east of Del Norte County would be a sensible plan of action. If U.S. Highways 101 and 199 are impassible as the result of bridge and/or Last Chance Grade failures, OASIS Transportable Units could not be utilized in Del Norte County unless they were delivered by Army National Guard CH-47 helicopter. Landline communications systems can be swamped by excessive customer use during serious emergencies, lost altogether due to power failures, and interrupted for long periods when telephone poles and lines fail. The Hiouchi Planning Area experienced nearly all of those predicaments over the past few years. Even during a moderate earthquake, serious hazard vulnerability can stem from electricity loss and communications breakdowns. Continuity in governance relies heavily upon dependable communications capabilities, which is a FEMA teaching point for public officials during workshops and seminars. Last, Del Norte County's Tactical Interoperable Communications Plan is dependent upon either line-of-sight radio communications from transmitter station to receiver station or a repeater antenna placed high above the transmitter and receiver stations that are attempting to communicate with each other.

Del Norte County's repeater array located on Red Mountain currently serves as the region's hub for first-responder communications. All repeaters at that location must be removed by 2019. FEMA (Cal OES) is reportedly considering only one alternative at this juncture, which is Rogers Peak in Humboldt County just east of Big Lagoon at 2,779 feet. Search and Rescue (SAR) topography radio frequency engineering software indicates that, absent line-of-sight capability, the communities of Gasquet, Hiouchi, and Smith River would not be able to communicate with any type of repeater placed on Rogers Peak. A satisfactory alternative to Red Mountain's repeaters therefore does not yet exist. However, placement of the proposed 70-foot antenna tower on Hiouchi Mountain would indeed facilitate connection with an existing and fully operational Del Norte Amateur Radio Club

(DNARC) repeater located at Camp 6 above Gasquet. (The site is owned by the State of California and managed by the California Highway Patrol.)

The JCEC that coordinates all SAR activities in southern Oregon is able to communicate through Camp 6, thereby giving the Hiouchi Planning Area the option of utilizing a highly effective SAR network when needed and an extensive HAM communications network that would expand Hiouchi's emergency reach throughout the western United States and provide the District with options to communicate directly with California's Northern Operations Center in Redding and also California's Office of Emergency Services Warning Center at Mather in a worst-case scenario. The stand-alone antenna tower can endure significant seismic and wind forces; support transmissions and reception from antenna arrays mounted at the top of the tower well above surrounding treetops; offer a range of communications capabilities via HF, VHF, and UHF amateur and "first-responder" frequency bands; integrate a repeater system that links with a repeater at Camp 6; and operate off of the conventional power grid via a 30 kW electrical generator system (see BRCSD 1) equipped with an ample propane fuel supply.

Benefits: This state-of-the-art emergency communications system featuring extensive amateur (HAM) radio capabilities would link Hiouchi directly to the Josephine County Emergency Center in Merlin, Oregon, Del Norte County's Emergency Operations Center in Crescent City, the Northern Operations Center in Redding, and FEMA's (Cal OES) command center at Mather, California. Del Norte County's Search and Rescue Team would enjoy access to the BRCSD's communications system, thereby providing the Team with enhanced operational capabilities in remote mountainous areas of this county. HAM radios have been used since the early 1900s to support civilian and military emergency operations.

Implementation: The District is currently working with the JCEC in Merlin (Oregon), and actively participating in monthly emergency communications exercises with the Southern Oregon Amateur Radio Club, Pelican Bay Amateur Radio Club (Oregon), and Del Norte Amateur Radio Club to develop the appropriate system requirements and operations protocols for its own emergency preparedness needs.

Estimated Cost: $110,000

Potential Funding: Local budgets, grant funds

Schedule: Merge project into the HSP (see BRCSD 1)

BRCSD 3—Replace the 50,000-gallon Redwood water tank with a bolted steel tank mounted on ultramafic granite and increase total capacity to 100,000 gallons. Secure against threats of vandalism/terrorism

Hazards Addressed: Wildfire, Earthquake, Severe Weather, Hazardous Materials

Issue/Background: The District's engineering evaluation of the water system showed the need for approximately 350,000 gallons of storage to support daily variations in demand, fire protection, and emergency supplies should the District's intake system fail. (GHD, 2016).

Benefits: Improves the District's ability to provide water for fighting fires and increases supplies for emergency conditions that shut down the District's source water production.

Implementation: The District has the lead for implementation of mitigation action, and would be responsible for issuing contracts for the design and construction of the new tank.

Estimated Cost: $1.5 million

Potential Funding: SWRCB Grant, DWR Grant or HMGP

Schedule: Next five years

BRCSD 4—Improve road access to the District's assets and emplace flood and erosion barriers.

Hazards Addressed: Wildfire, Earthquake, Flood, Landslide, Severe Weather, Hazardous Materials

Issue/Background: The BRCSD owns and manages several remote facilities that are critical to the safe and healthy operations of the District. They require daily attention.

Benefits: Prevent existing road and trail thoroughfares from hindering rapid responses during disasters. Road improvements and installation of flood/erosion barriers would mitigate damage caused by winter water runoff. Facilitate access during wet winter conditions. Enable security measures to be applied along asset access routes in accordance with U.S. Department of Homeland Security Guidelines for public water systems in rural areas.

Implementation: The District has the lead for the mitigation action. Its Board of Directors/Trustees is eager to work with other public agencies as necessary for implementation.

Estimated Cost: $850,000

Potential Funding: SWRCB Grant or HMGP

Schedule: Next five years

BRCSD 5—Upgrade the existing SCADA system.

Hazards Addressed: Wildfire, Earthquake, Flood, Landslide, Severe Weather, Hazardous Materials

Issue/Background: The existing SCADA system does not provide the functionality needed to control the system from remote locations, which can place the community at risk from health and safety standpoints especially when the BRCSD's managers are not able to access the mountainside during inclement weather. During the winter of 2016/2017, for instance, Hiouchi experienced 150 inches of precipitation that caused extensive persistent erosion of unpaved surfaces leading to limited access to water storage tanks, pumps, and emergency generator assets controlled by the aged and design-limited SCADA system. In addition, problems are mounting as the SCADA system continues to degrade. A remote control capability, design improvements, modern performance sensors that link to a secure website, and fault reporting nodes should be added and/or modernized to prevent water loss, improve system efficiencies, increase water system management effectiveness, and ensure system security.

Benefits: Improves the partially degraded system's abilities to manage and secure water storage and distribution assets.

Implementation: The District has the lead for implementation of mitigation action, and would be responsible for issuing contracts for the design and installation of the upgraded SCADA system.

Estimated Cost: $500,000

Potential Funding: SWRCB Grant or HMGP

Schedule: Next 5 years

BRCSD 6—Purchase a ¾-ton 4WD replacement vehicle for operations staff that is equipped with VHF/UHF radio.

Hazards Addressed: Wildfire, Earthquake, Flood, Landslide, Severe Weather, Hazardous Materials

Issue/Background: The BRCSD's water distribution, treatment, and storage assets are spread over 1.44 square miles of sometimes steep, mountainous terrain served by unimproved access roads. During a hazard event road disruption is expected. Roads in Hiouchi and the adjoining mountains are typically unusable by traditional vehicles, especially during flooding. Such would be the anticipated situation after a Cascadia Earthquake Event, for example. The District must have the ability to reach infrastructure for repairs, maintenance, inspections, frequent meter reading, and general systems operations at all times. Emergency management must be conducted from the subject vehicle.

Benefits: The 4WD can carry heavy loads and serve during emergencies as a mobile command post able of communicating while enabling responsibility for directing regional disaster response teams.

Implementation: The District has the lead for implementation of this mitigation action.

Estimated Cost: $85,000

Potential Funding: District funds, HMGP

Schedule: Next 2 years

BRCSD 7—Purchase two satellite telephones with a 5-year service contract.

Hazards Addressed: Wildfire, Earthquake, Flood, Landslide, Severe Weather, Hazardous Materials

Issue/Background: During a hazard event, disruption of roads is expected. At times, roads in Hiouchi are unusable by all but 4WD vehicles. Electricity and telephone lines are often inoperative. All of the hazards listed above can present impasses to managers who need to communicate for immediate assistance. In addition, District personnel can find themselves in remote places where line-of-sight communications are impossible. The only communication resort in such extenuating circumstances is via satellite telephone.

Benefits: Communicate while mobile with regional disaster response teams.

Implementation: The District has the lead for implementation of this mitigation action

Estimated Cost: $80,000

Potential Funding: District funds, HMGP

Schedule: Next 2 years

BRCSD 8— Replace all aged water mains, including resilient features, to reduce damage during hazard events.

Hazards Addressed: Earthquake, Severe Weather

Issue/Background: Pipelines subjected to significant displacement can develop leaks or breaks. These may be caused by ground deformation, friction wear by sharp rocks, or by strong ground shaking (CalOES, 2013). The District's AC (asbestos-concrete) water mains are over 47 years old and reaching the end of their useful life, estimated at 50 years. Older pipes and those constructed with inferior technologies are more vulnerable to breaks and leaks due to minor earthquakes and severe weather events, potentially leaving portions of the community without potable water. Typical mitigation measures to counter this vulnerability include (a) assessing siting requirements and installing flexible couplings during the pipeline replacement process, (b) replacing thrust blocks on pipeline junctions that have greater than 45-degree offsets, and (c) substitution of entire pipeline sections with newer and stronger pipes. The District needs to replace approximately 2.8 miles of pipe, along with the associated valves, corporation boxes, and pressure reducers. The potential benefits of earthquake-proof water pipelines, such as those used in Japan for the past 40 years, more recently have been proposed for installation in San Francisco (SHMP,2013). The challenges associated with providing drinkable water in the aftermath of a Cascadia Earthquake Event argues in favor of a similar mitigation strategy for Hiouchi.

Benefits: Avoid loss of water service.

Implementation: The District has the lead for implementation of this mitigation action

Estimated Cost: $7.2 million

Potential Funding: Grants SWRCB or HMGP

Schedule: On-going

BRCSD 9— Support countywide initiatives identified in Del Norte County's MJHMP.

Hazards Addressed: All Hazards

Issue/Background: A coordinated, countywide approach to hazard mitigation is without question the most effective strategy pursuant to reducing vulnerabilities throughout the area. In early 2016, the BRCSD created and led the Del Norte Water Resources Network with membership of all 6 CSDs in the county, the incorporated City of Crescent City, the Crescent City Laboratory, the Crescent City Wastewater Treatment Plant, and the Del Norte County Farm Bureau. The District continues to chair this important collaborative effort that offers mutual assistance to its members at

all hours of each day. The BRCSD intends to merge back into the County of Del Norte's Multi-Jurisdictional Hazard Mitigation Plan that is presently starting its long journey toward MJHMP reconstruction.

Benefits: Supports coordinated planning across Del Norte County

Implementation: The District will incorporate revisions to its stated Mitigation Actions as needed during the County's republication of to the Hazard Mitigation Plan, to which the District will attach its annex.

Estimated Cost: $2,500

Potential Funding: District Funds

Schedule: On-going

BRCSD 10— Develop a Big Rock CSD Catastrophic Disaster Plan addressing prevention, protection, response, recovery, and mitigation.

Hazards Addressed: All Hazards

Issue/Background: A Catastrophic Disaster Plan is required to anticipate and manage hazards as they develop. The BRCSD's NHN Program initiative will be exercised as previously discussed to maintain community interest in emergency preparedness, provide adequate training, develop localized experience levels, provide an opportunity for feedback on hazard mitigation planning, and enable the community to perfect its emergency management procedures pursuant to hazard mitigation. Disaster recovery processes will be emphasized.

Benefits: Inspired community involvement would enhance the survival of all residents within the District's sphere of influence.

Implementation: The BRCSD intends to collaborate with the County's Emergency Services Team to incorporate the County's planning considerations into the District's plan.

Estimated Cost: $3,000

Potential Funding: District Funds

Schedule: On-going

BRCSD 11— Enhance District and Public Education and Mitigation Awareness for Natural Hazards.

Hazards Addressed: All Hazards

Issue/Background: Mitigation for disasters prior to their occurrence and preparedness are key to survival under exigent conditions, especially in a violent situation such as the Cascadia Earthquake Event that threatens to isolate the community of Hiouchi if the surrounding bridges collapse. An earthquake of that magnitude can destroy homes, injure residents and cause sickness, food becomes scarce, and criminal activity develops. Assistance from afar would bring the necessary relief by helicopter, such as survival essentials, medications, evacuation as a matter of last resort, etc. Neighborhoods must be able to deal with such exigencies and work together for the benefit of

all. Panic can be minimized when a community is prepared, strong leadership is present, and neighborhood support teams are well organized and trained. Additional education on actions community members can take to protect themselves and their property during a hazard event is needed. All of the District's Neighborhood Leaders need to be educated, trained and equipped to provide mitigation ideas to lessen the effects of hazards as well as how to effectively deal with each hazard listed in this LHMP.

Benefits: Heightened community understanding of disaster mitigation options and preparedness resources to reduce the impacts of natural disasters.

Implementation: The District intends to collaborate with the County's Emergency Services Team to improve the public's understanding of home based mitigation actions. The NHN Program will be used to provide resources to homeowners on mitigation opportunities and to solicit feedback on the LHMP through neighborhood leaders which will provide neighborhood feedback to the Big Rock CSD Board on plan implementation.

Estimated Cost: $30,000

Potential Funding: HMGP grants, District funds

Schedule: On-going

BRCSD 12— Support Smith River Fire Protection District, Fire Station No. 2 with structural seismic upgrades and installation of emergency preparedness equipment.

Hazards Addressed: All Hazards

Issue/Background: Fire Station No. 2 is situated in the middle of Hiouchi on U.S. Highway 199. In addition to providing firefighting capabilities for the general area, it also serves as the Hiouchi's assembly hall for public meetings of the District's Board of Directors/Trustees. The firehouse building is situated on two acres of land owned by the National Park Service (NPS). The Smith River Fire Protection District (SRFPD) owns and occupies the building at the pleasure of the NPS. In emergency situations of any nature, the District uses the firehouse and host property as an Incident Command Post. The building does not have an alternate electricity source. The District hopes to strengthen the building with seismic retrofits to mitigate earthquake damage, subsequently equip the firehouse office with a HAM radio system, and locate two large CONEX buildings behind the firehouse for an emergency generator, vital emergency supplies, and propane fuel for the generator.

Benefits: Enhance the District's capability to manage all emergencies implied by the hazards listed in this LHMP.

Implementation: The District has acquired informal permission from the NPS and the SRFPD to proceed with this proposed plan.

Estimated Cost: $165,000

Potential Funding: HMPG grants

Schedule: On-going

4.3.2 Mitigation Action Summary and Prioritization

Mitigation actions were evaluated relative to Big Rock CSD's Bylaws, Operations Plan, Vision, Mission and Goals and the input received during the initial public outreach District Board Meetings, and Neighbor's Helping Neighbor's leader feedback. The mitigation action were prioritized by the Planning Team based on the three criteria listed below, in consideration of the inputs presented above.

- Public Safety: This is the most important priority for any government agency to prevent loss of life and injury, and thus was given the highest importance with a weight of 2 when ranking mitigation actions.
- Public Health: Second only to public safety, public health is a constitutional imperative for all public officials, and was given a weight of 1 Public health considerations include property protection, regional access, and communication protection.
- Benefits Relative to Costs: It is important to prioritize actions that result in the greatest benefit for the costs spent. Insofar as benefits are qualitatively described for all actions and costs were estimated where possible this category was qualitatively assessed, and was given a weight of 1.

A score was assigned for each criteria for each mitigation action based on the judgement of the planning team in considerations of the relevant Big Rock bylaws, Each mitigation action was assigned a score between 3 and 0 for the three prioritization criteria with scores defined as follows:

- Criteria score of 3: The mitigation action is highly effective and feasible in addressing the criteria and is estimated to have a high benefit to cost ratio.
- Criteria score of 2: The mitigation action is effective in addressing the criteria, is feasible, and has a cost benefit ratio estimated close to 1.
- Criteria score of 1: The mitigation action has a low level of effectiveness, but is feasible, and has a low benefit to cost ratio.
- Criteria Score of 0: The mitigation action has not benefits relative to the criteria or is not feasible.

Table 4.1 Summary and Ranking of Mitigation Measures

Mitigation Action (weight)	Public Safety (2)	Public Health (1)	Benefits vs. Costs (1)	*Score*	Ranking	Priority
BRCSD 1—Replace the 100,000-gallon Redwood water storage tank	3	3	3	12	1	High
BRCSD 2—Install a complete emergency communications system	2	3	3	10	2	High
BRCSD 3—Replace the 50,000-gallon Redwood water tank	2	2	2	8	6	Medium
BRCSD 4—Improve road access to the District's assets	2	3	2	9	5	High
BRCSD 5—Upgrade the existing SCADA system	2	3	3	10	3	High
BRCSD 6—Purchase a VHF/UHF radio equipped ¾-ton 4WD replacement vehicle	2	3	3	10	4	High
BRCSD 7—Purchase two satellite telephones	1	3	3	8	7	Medium
BRCSD 8—Replace all aged water mains	1	1	1	4	12	Medium
BRCSD 9---Support countywide initiatives	1	1	1	4	11	Low
BRCSD 10—Develop a Big Rock CSD Catastrophic Disaster Plan	2	1	3	8	8	Medium
BRCSD 11— Enhance District and Public Education and Mitigation Awareness for Natural Hazards	2	1	1	6	9	Medium
BRCSD 12— Support SRFPD, Fire Station No. 2 with structural seismic upgrades and installation of emergency preparedness equipment	1	2	1	5	10	Medium

Table 4.2 Summary and Ranking of Mitigation Measures

Mitigation Action	Priority	Ranking
BRCSD 1—Replace the 100,000-gallon Redwood water storage tank with a bolted steel tank mounted on a granite shelf, and increase its working capacity to 200,000 gallons in order to accommodate new water service obligations. Upgrade the existing SCADA system. Retain the existing on-site 30 kW generator and propane fuel field. Concurrently stabilize a section of Hiouchi Mountain that is threatened by catastrophic seismic activity, and add an emergency communications capability. Improve vehicle access to the site. Acquire ownership of 6.83 acres to secure all hillside facilities and the access point against terrorism/vandalism.	High	1
BRCSD 2—Install a complete emergency communications system along with a 70-ft antenna tower for emergency HF/VHF/UHF and Simplex communications. The tower will feature a microwave antenna to perform SCADA operations.	High	2
BRCSD 3—Replace the 50,000-gallon Redwood water tank with a bolted steel tank mounted on ultramafic granite and increase total capacity to 100,000 gallons. Secure against threats of vandalism/terrorism.	Medium	6
BRCSD 4—Improve road access to the District's assets and emplace flood and erosion barriers.	High	5
BRCSD 5—Upgrade the existing SCADA system.	High	3
BRCSD 6—Purchase a ¾-ton 4WD replacement vehicle for operations staff that is equipped with VHF/UHF radio.	High	4
BRCSD 7—Purchase two satellite telephones with a 5-year service contract.	Medium	7
BRCSD 8—Replace all aged water mains, including resilient features, to reduce damage during hazard events.	Medium	12
BRCSD 9---Support countywide initiatives identified in Del Norte County's MJHMP.	Low	11
BRCSD 10—Develop a Big Rock CSD Catastrophic Disaster Plan addressing prevention, protection, response, recovery, and mitigation.	Medium	8
BRCSD 11— Enhance Public Education and Mitigation Awareness for of Natural Hazards. and Public Understanding of Disaster Preparedness.	Medium	9
BRCSD 12— Support Smith River Fire Protection District, Fire Station No. 2 with structural seismic upgrades installation of emergency preparedness equipment.	Medium	10