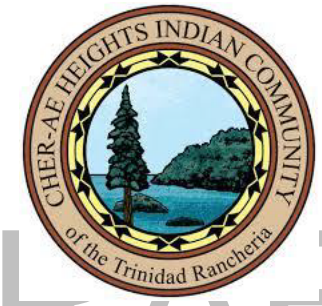
Multi-Hazard Mitigation Plan Update

December 2024

Prepared for:



Cher-Ae Heights Indian Community of the Trinidad Rancheria

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Executive Summary

"Hazard mitigation planning reduces loss of life and property by minimizing the impact of disasters. It begins with state, Tribal and local governments identifying natural disaster risks and vulnerabilities that are common in their area. After identifying these risks, they develop long-term strategies for protecting people and property from similar events. Mitigation plans are key to breaking the cycle of disaster damage and reconstruction." (Federal Emergency Management Agency, 2024)

A. Introduction

The Cher-Ae Heights Indian Community of the Trinidad Rancheria (Trinidad Rancheria / Tribe) has developed this plan to protect lives, property, cultural resources, and the environment, as well as support tribal sovereignty. Trinidad Rancheria feels strongly about completing mitigation actions, including education, to help the tribal community be more prepared and better able to assist themselves. In addition, Trinidad Rancheria has developed specific actions to also cooperate with the surrounding local community in each other's mitigation, response, and recovery efforts. Trinidad Rancheria is committed to creating a stable, secure, and resilient environment capable of addressing a variety of natural and man-made hazards. Of note in 2019, the National Institute of Building Sciences (NIBS) reported that the benefit cost ratio for natural hazard mitigation is as follows:

- 11:1 overall, nationwide
- 6:1 for riverine flooding
- 10:1 for wind
- 12:1 for earthquake (National Institute of Building Sciences, 2019)

In other words, every $1 spent on hazard mitigation saves $6-$12 in damages. Therefore, in addition to protecting lives, property, cultural resources, and the environment, there is a strong economic case for taking pre-disaster mitigation measures.

All Trinidad Rancheria members, departments, enterprises, and community partners will benefit from this update to the Trinidad Rancheria Multi-Hazard Mitigation Plan (TRMHMP). Tribal leadership, departments, enterprises, and Tribal members all play a vital role in disaster preparedness, response, and recovery. Therefore, it is necessary to have a plan that strategically outlines the steps necessary to reduce the risk from any natural hazard. It is also important for the

Tribe to increase its capacity to respond to natural disasters in a way that is well planned and organized.

B. What is Hazard Mitigation?

The first step to understanding the Trinidad Rancheria's Hazard Mitigation Plan is to understand what hazard mitigation is. Hazard mitigation is any action taken to reduce or eliminate the long-term risk to human life and property from human-caused or natural hazards. A hazard is any event or condition with the potential to cause fatalities, injuries, property/infrastructure damage, agricultural loss, environmental damage, business interruption, or other structural and financial loss. As communities grow, hazard mitigation will play an even more important role in the government's primary objective of protecting its citizens' health, safety, and welfare.

Hazard mitigation aims to make human development and the natural environment safer and more resilient. Hazard mitigation generally involves altering the built environment to significantly reduce risks and vulnerability to hazards so that life and property losses can be avoided or reduced. Mitigation can also include removing the built environment from disaster prone areas and maintaining natural mitigating features such as wetlands or floodplains. Hazard mitigation makes it easier and less expensive to respond to and recover from disasters by breaking the damage and repair cycle.

Examples of hazard mitigation measures include, but are not limited to the following:

- Development of mitigation standards, regulations, policies, and programs
- Land use/zoning policies
- Adherence to strong statewide building code and floodplain management regulations
- Slope stabilization, seawalls, and levee systems
- Acquisition of flood prone and environmentally sensitive lands
- Retrofitting/hardening/elevating structures and critical facilities
- Relocation of structures, infrastructure, and facilities out of vulnerable areas
- Public awareness/education campaigns
- Improvement of warning and evacuation systems

Benefits of hazard mitigation include:

- Saving lives and protecting public health
- Preventing or minimizing property damage
- Minimizing social dislocation and stress

- Reducing economic losses
- Protecting and preserving infrastructure
- Less expenditures on response and recovery efforts

C. Why Develop This Plan?

The future and sovereignty of the Trinidad Rancheria is strengthened when the Tribe adapts to climate change, becomes more resilient to disasters, and mitigates the effects of both. Disasters are becoming increasingly devastating and costly over time. As damage and the associated costs from disasters continue to increase, Trinidad Rancheria realizes the importance of identifying effective ways to reduce its vulnerability to disasters. The hazard mitigation plan assists Trinidad Rancheria in reducing risks from hazards by focusing on the effects of the most significant hazards and threats, identifying Tribal vulnerabilities and resources, sharing information, and developing strategies for risk reduction. The plan also helps to guide and coordinate mitigation activities throughout the Trinidad Rancheria. This plan provides a set of action items to reduce risk from hazards through education and outreach programs and to foster the development of partnerships and implementation of preventative activities, such as land use programs that control development in areas subject to damage from hazards.

An important aspect of sovereignty is ensuring and preserving the option of autonomous prevention, protection, mitigation, response, and recovery activities. Jurisdictions that desire to be direct applicants/recipients (vice sub-applicants) of mitigation grants are required to have a current hazard mitigation plan. In addition, jurisdictions requesting the full complement of Federal aid during disaster recovery must have a current, FEMA-approved hazard mitigation plan (Table 1).

Table 1. FEMA Assistance Programs and Mitigation Plan Requirements.

FEMA Assistance Program	Required for a State/Tribal Applicant?	Required for a Tribal/Local Sub-Applicant?
Individual Assistance (IA)	No	No
Public Assistance (PA) **Categories A and B (e.g., debris removal, emergency protective measures)**	No	No
Public Assistance (PA) **Categories C through G (e.g., repairs to damaged infrastructure, publicly owned buildings)**	Yes	No
Fire Mitigation Assistance Grants (FMAG)	Yes	No
Hazard Mitigation Grant Program Post Fire	Yes	Yes
Hazard Mitigation Grant Program (HMGP) **planning grant**	Yes+	No

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Table 1. FEMA Assistance Programs and Mitigation Plan Requirements.		
FEMA Assistance Program	**Required for a State/Tribal Applicant?**	**Required for a Tribal/Local Sub-Applicant?**
Hazard Mitigation Grant Program (HMGP) project grant	Yes+	Yes++
Building Resilient Infrastructure and Communities (BRIC) planning grant	Yes*	No
Building Resilient Infrastructure and Communities (BRIC) project grant	Yes*	Yes**
Safeguarding Tomorrow Revolving Loan Fund Program	Yes	Yes
Flood Mitigation Assistance (FMA) planning grant	Yes*	No
Flood Mitigation Assistance (FMA) project grant	Yes*	Yes**

[+] At the time of the Presidential major disaster declaration and at the time of obligation of HMGP grant funds.

[++] At the time of obligation of HMGP grant funds for mitigation projects.

[*] By the application deadline and at the time of obligation of the BRIC or FMA award.

[**] By the application deadline and at the time of obligation of BRIC or FMA grant funds for mitigation projects.

D. Federal Emergency Management Agency Guidance

1. Code of Federal Regulations, Title 44

Trinidad Rancheria is updating its multi-hazard mitigation plan in compliance with the Code of Federal Regulations, Title 44, Chapter 1, Subchapter D, Part 201, Section 201.7 (44 CFR §201.7), which defines Tribal mitigation plan requirements. Title 44, Chapter 1, Part 201 (44 CFR Part 201) of the Code of Federal Regulations (CFR) contains requirements and procedures to implement the hazard mitigation planning provisions of the Stafford Act. Title 44 CFR Part 201 directs state, local, and American Indian Tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources. Tribal mitigation planning requirements were specifically created under 44 CFR §201.7 to give Tribes more flexibility and the ability to meet the eligibility requirements of a grantee or subgrantee for Federal Emergency Managements Agency (FEMA) Hazard Mitigation Assistance programs. The 44 CFR §201.7 requirements are derived from the Disaster Mitigation Act of 2000 (Public Law 106-390), which amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), which seeks:

"…to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

2. Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (DMA2K), commonly known as the 2000 Stafford Act Amendments, was approved by Congress on October 10, 2000. Section 322 is the DMA2K amendment to the Stafford Act that primarily deals with hazard mitigation planning as it relates to the development of local hazard mitigation plans. The DMA2K legislation was signed into law on October 30, 2000. Hazard mitigation planning requirements for Tribes wishing to participate as grantees under the public assistance and hazard mitigation programs are implemented in the Interim Final Rule at 44 CFR Part 201.7.

The overall purpose of DMA2K is to establish a national program for pre-disaster mitigation, streamline administration of disaster relief at both the federal and state levels, and control federal costs of disaster assistance. Congress envisioned that implementation of these new requirements would result in the following key benefits:

- Reduction of loss of life and property, human suffering, economic disruption, and disaster costs.
- Prioritization of hazard mitigation planning at the local level, with an increased emphasis placed on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring critical services/facilities survive a disaster.
- Establishment of economic incentives, awareness and education via federal support to state, Tribal, and local governments, that will result in forming community-based partnerships, implementing effective hazard mitigation measures, leveraging additional non-Federal resources, and establishing commitments to long-term hazard mitigation efforts.

In general, the DMA2K legislation requires all local, county, and Tribal governments to develop a hazard mitigation plan for their respective communities in order to be eligible to receive certain types of non-emergency disaster assistance. Approval and adoption of this plan will also satisfy the requirements of the Flood Mitigation Assistance Program (FMA) (Table 1).

By satisfying these requirements, Trinidad Rancheria not only fulfills federal regulations but also strengthens its capacity to protect lives, property, and community assets from natural and human-caused disasters. OBJ

E. Organization

This TRMHMP update has significant changes from the previous version. Most notably, it is organized in sections around FEMA's five required hazard mitigation planning elements:

I. Element A – Planning Process
II. Element B – Hazard Identification and Risk Assessment
III. Element C – Mitigation Strategy
IV. Element D – Plan Updates
V. Element E – Assurances and Plan Adoption
VI. Appendices

While all the elements are essential, the most important element is the mitigation strategy because it contains the actions that Trinidad Rancheria will take to lessen the impacts of disasters.

Executive Summary

1. Section I – The Planning Process

As described in the executive summary above, Trinidad Rancheria has developed this TRMHMP update to protect people, property, cultural resources, and the environment by lessening the impacts of disasters. In creating this update, Trinidad Rancheria took a whole community approach to maximize the input from its leadership, staff, Tribal members, non-member residents and workers, surrounding jurisdictions and citizens, the State of California, the Federal government, the private sector, non-profit organizations, and volunteer agencies. Trinidad Rancheria used web-based, electronic (emailed), and hard-copy surveys (Appendix B). Planners also conducted interviews (Appendix C) of key Trinidad Rancheria staff and held multiple open community workshops to garner input. From that input, the planning team and Tribal Council retained, but updated the previous plan's goals and objectives. While a full description of the goals and objectives is provided in Section III, the goals are:

Goal #1: Protect Lives and Property *- Implement activities that assist in protecting lives by making homes; businesses; infrastructure; critical facilities; natural and cultural resources; and other property more resistant to hazards.*

Goal #2: Promote Sustainable Living *- Promote development in a sustainable manner.*

Goal #3: Increase Public Awareness of Local Hazards *- Increase public awareness, understanding, support, and demand for hazard mitigation.*

Goal #4: Enhance Partnerships and Implementation *- Build and support local partnerships to continuously become less vulnerable to hazards.*

Goal #5: Strengthen Emergency Services Capability *- Establish policies and procedures to ensure mitigation projects for critical facilities, services, and infrastructure.*

2. Section II – Hazard Identification and Risk Assessment

Section II changed significantly from the previous TRMHMP. First, the impact of climate change on each natural hazard was an overriding consideration. As a coastal community, Trinidad Rancheria is especially vulnerable to the effects of climate change. In consideration of climate change as well as actual events, Trinidad Rancheria has evaluated additional natural hazards such as sea level rise, coastal erosion, and marine animal disease. The hazard identification and risk assessment terminology has also changed to reflect FEMA's three factors for evaluating hazards – location, extent, and probability of occurrence.

The "worst most likely" scenario-based hazard descriptions are included that match Trinidad Rancheria's Threat and Hazard Identification and Risk Assessment (THIRA). The hazard

identification and risk assessment resulted in the threats and hazards of most concern shown in Table 2:

Table 2. Threats and Hazards of Concern.		
Natural Hazards	**Technological Hazards**	**Human-caused Threats**
Coastline Erosion	HAZMAT Release – Land	Armed Assault
Drought	HAZMAT Release - Marine	Biological Attack
Earthquake	Power Failure	Cyberattack - Data
Epidemic	Structure Fire	Cyberattack - Infrastructure
Flood	Transportation Accident	Hostage Situation
Landslide		Threats to Clean Water
Land Animal Disease		
Marine Animal Disease		
Sea Level Rise		
Sever Winter Storms		
Smoke		
Tsunami		
Wildfires		

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3. Section III – Mitigation Strategy

The most significant change from the previous TRMHMP is a re-alignment of goals and objectives to prioritize protecting life and property. The Office of Emergency Services (OES) Team developed the specific actions and conducted analysis to prioritize their accomplishment. These mitigation actions will be assigned to specific Trinidad Rancheria staff during the execution of the strategy in the years to come. While most of the actions are executable in a three-to-five-year time frame, actions are included that could take decades to accomplish. For example, sea level rise and coastal erosion are slowly evolving natural hazards that will take the better part of the next century to result in significant impacts. However, long-term actions must be started now to protect Tribal lands and resources from these hazards. In the spirit of taking a wholistic approach, the planning team also developed a set of strategic-level concerns that stretch across the entire emergency management program:

Scenic Drive - worst most likely	• Cuts off Tribal Administration, EOC, Social Services, The Heights Casino, and 18 homes.
Erosion & landlsides across the Reservation	• Multiple cuases - storms, floods, earthquakes.
Land & marine animal diseases	• Warming oceans, changing acidity, invasive species, disease. • Warmer, dryer summers increase vectors.
Historic, cultural, archeological resources	• Opportunity for protection.
Planned & unpanned power outages	• Emergency power needed for safety & continuity.
Active shooter	• Opportunity for increased security.

4. Section IV – Plan Updates

Through its deliberate planning process, the Tribe has made a number of updates from the previous plan.

- New goals reflect a greater priority on protecting lives and property.
- There is an extensive analysis of the impact of climate change.
- There are far more GIS-based analyses.
- FEMA's National Risk Index was used where it was applicable (the county and census tract levels typically do not provide great fidelity to small jurisdictions such as Trinidad Rancheria).
- FEMA's Resilience Analysis and Planning Tool (RAPT) tool was used extensively.
- The Centers for Disease Control and Prevention (CDC) Social Vulnerability tool was used.
- The strategy, especially goals and projects, reflects greater concern for climate change, sustainable living, and resilience.
- The Tribe's Threat and Hazard Identification and Risk Assessment (THIRA) was updated concurrently – both this Plan and the THIRA are synchronized.

The Tribe has been active in executing its mitigation strategy such as slope stabilization, emergency power, expanding culverts, etc. Completed actions are reflected in Section III.

5. Section V – Assurance and Plan Adoption

This plan was developed with grants and assistance from the Federal Emergency Management Agency (FEMA), as well as other Tribal, federal, state, and local resources.

The plan was formally adopted by the Trinidad Rancheria Tribal Council on November XX, 2024. The plan was approved by FEMA Region 9 on December XX, 2024.

The effective dates for the Trinidad Rancheria Tribal Hazard Mitigation Plan are December XX, 2024 - December XX, 2029.

6. Section VI – Appendices

In the interest of minimizing the size of the base plan, where a large volume of supporting information is required, it is located in appendices.

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F. Summary

The Trinidad Rancheria is dedicated to sustaining and expanding its resilience efforts through hazard mitigation planning and actions. The TRMHMP is an important foundational document in realizing the overall objective of increasing Tribal resilience.

In addition to simply being in the best interest of the Tribe, having a FEMA-approved hazard mitigation plan is a condition for receiving certain types of Federal assistance (Table 1). Per 44 CFR §201.7, the Tribe is updating its TRMHMP within the five (5) year timeframe to keep it current.

This plan is structured according to FEMA's five (5) required elements to ensure its completeness and facilitate ease of review and implementation. It begins by outlining the planning process, followed by a new hazard identification and risk assessment that describes the threats and hazards of concern. The plan then presents an updated strategy, including new goals, objectives, and mitigation action items. It highlights the updates made since the previous revision and concludes with assurances and then the formal adoption of the plan. Supporting information is provided in the appendices. Through both mitigation actions and other preparedness efforts, the Trinidad Rancheria endeavors to ensure the resilience of the Tribe for generations to come.

Section I: The Planning Process

I. The Planning Process

"The mitigation plan belongs to the local community." (Federal Emergency Management Agency 2013, I-2)

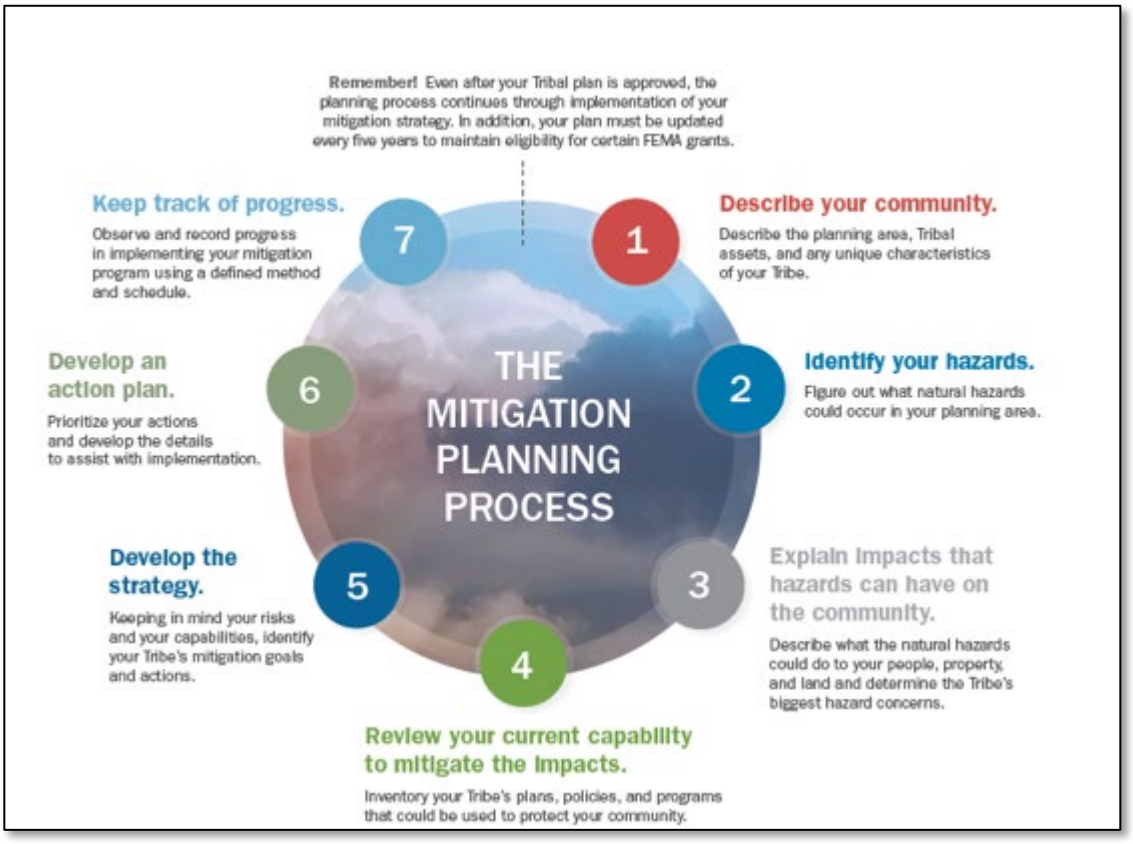


Figure 1. FEMA's Seven-Step Tribal Hazard Mitigation Plan Development Process.

Section I: The Planning Process

A. Plan Development Schedule and Planning Team

As depicted in Figure 1, the Planning Team followed the seven (7)-step mitigation planning process per the Federal Emergency Management Agency's, "Tribal Hazard Mitigation Planning Handbook, May 2019."

1. **Describe your community** – on September 11, 2024, the Planning Team held a kick-off meeting to officially begin the planning process. In addition to generally describing the community, the Planning Team updated threat and hazard profiles for its 2024 Threat and Hazard Identification and Risk Assessment (THIRA) / Stakeholder Preparedness Review (SPR). In addition, the effort supported the Rancheria's 2024 Integrated Preparedness Plan (IPP).
   The first step in the THIRA/SPR process was to describe the community and its hazards of concern. The THIRA/SPR effort involved reviewing such documents as the existing TRMHMP, Humboldt County, CA Hazard Mitigation Plan, California State Enhanced Hazard Mitigation Plan, the Trinidad Rancheria 2023 THIRA/SPR, and the Tribe's plan for developing redundant access to the Rancheria. In addition, the Tribe seeks to expand its revenue base using natural resources that must be protected through its interpretive center project.
2. **Identify your hazards** – As detailed in Section II, Trinidad Rancheria used existing plans and assessments, studies, as well as new surveys (Appendix B), workshops, and interviews (Appendix C) to fully capture and articulate the hazards and threats of greatest concern with respect to the location each hazard affects, the extent of the damage due to the magnitude and vulnerability of the Tribe, and probability of occurrence. The outreach included Tribal leadership, Tribal members and staff, and local city, county, state, and Federal partners. Of note, the Tribe hosted both internal staff and public workshops on September 10-12, 2024to garner whole community input.
3. **Explain impacts that hazards can have on the community** – The first step in explaining the impacts that hazards have on the community was in the THIRA/SPR surveys and workshops. Through the THIRA/SPR effort, the participants first assessed each threat/hazard based on location, extent, probability, and concerns. The follow-up surveys included THIRA/SPR context statements that described in detail the worst most likely impacts of each threat/hazard of concern. Based on the survey results, the Planning Team had open discussions about the impacts of the threats/hazards of concern at the internal leadership, staff, and public workshops on September 11, 2024. The workshops solidified

the impacts of the threats/hazards. In addition to surveys and workshops, studies, models, and additional subject matter expert input was used to explain the impacts of the threats and hazards as depicted in Section II.

4. **Review your current capability to mitigate the impacts** – An analysis of current capabilities to mitigate impacts began with the basic review of the current TRMHMP. The Planning team then specifically identified capabilities and gaps across FEMA's 32 core capabilities in the THIRA/SPR process. Perhaps the most important review of current capabilities to mitigate the impacts came from interviews conducted with Tribal leadership and departments. The first round of interviews occurred on September 11, 2024. The second round of interviews occurred on December 3-4, 2024. Additional new and follow-up interviews were conducted as needed to both clarify the information and gather additional information.
5. **Develop the strategy** – As detailed in Section III, Trinidad Rancheria used a combination of surveys, workshops, and interviews to develop the strategy. The Tribe used a classic strategy-to-task methodology to derive supporting action items for each objective.
6. **Develop the action plan** – As detailed in Section III, through a whole community effort, Trinidad Rancheria established goals, objectives, and priorities to guide the Tribe's mitigation efforts over the five-year span of this plan and beyond. The prioritized action plan is based on factors that help identify likelihood of project success:
    a. **Social Considerations** – Life/Safety Impact
        i. Will the project have a minimal, direct, or significant impact on the safety of businesses, residents, and properties within the Tribe?
        ii. Will the proposed action have an adverse impact on any one segment of the population within the Tribe?
        iii. Will the project be a proactive measure to reduce natural hazard risk?
    b. **Administrative Considerations** – Administrative/Technical Assistance
        i. Are there sufficient staff currently to implement the project?
        ii. Is training required for the staff to implement this project?
    c. **Economic Considerations** – Project Cost
        i. What is the approximate cost of the project?
        ii. How will the project be funded?

d. Other Considerations – Tribal Objectives

i. Does the action advance other Tribal objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the Tribal reservation master plan (or another comprehensive-type plan)?

7. **Keep track of the progress** – As detailed in Sections IV and V, Trinidad Rancheria has adopted this plan and will begin implementing the plan by conducting the mitigation activities in a prioritized manner. The Planning Team will review the plan and status of the mitigation efforts semi-annually and adjust as required.

Section I: The Planning Process

B. How the plan was prepared and who was involved

Element	Requirements
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process? **44 CFR § 201.7(c)(1)** ***Intent*: To inform Tribal members about the overall approach to the plan's development and serve as a permanent record of how decisions were made and who was involved. This record is also useful for the next plan update.**	a. The plan shall document how the plan was prepared, including the schedule or timeframe and the activities that made up the plan's development. ***Document** means to provide factual evidence for how the Tribal government developed the plan.* *The documentation requirement typically is met with a narrative description and other records, such as meeting minutes, sign-in sheets, or newspaper articles. Examples of activities that may be documented include, but are not limited to, planning team meetings, information exchanges at gatherings, meetings between Tribal offices or departments or with external agencies, open houses at libraries or school events, radio broadcasts, development of interactive web pages, and posting and distribution of printed materials.* b. The plan shall document who was involved on the planning team, including each person's position or title and department/agency. ***Involved in the process** means engaged as participants and given the chance to provide input to affect the plan's content. This is more than simply being invited or adopting the plan. Evidence of planning team participation may include documentation of meetings attended, data provided, or other activities by individuals or departments/agencies.*

First and foremost, this plan was developed using whole community concepts to be inclusive and to ensure the highest-quality information available. This update was developed based on FEMA's "Tribal Mitigation Planning Handbook," dated May 2019, and "Tribal Mitigation Plan Review Guide," effective December 5, 2018. Of note, this update incorporates the option reflected in the handbook and review guide to include technological hazards as well as human-caused threats that are described in the "National Preparedness Goal", Second Edition (2015). Furthermore, this update was developed in conjunction with the Trinidad Rancheria 2023 Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness per FEMA's Comprehensive Preparedness Guide (CPG) 201, 3rd Edition (2018). Information in the Mitigation Plan is based on research from a variety of sources. The intent is to integrate the

Section I: The Planning Process

TRMHMP with the six elements of the "National Preparedness System". Planners conducted data research and analysis, whole community surveys (Appendix B), Planning Team meetings, Trinidad Rancheria departmental interviews (Appendix C), a Tribal staff workshop, and public whole community workshops. Workshop and meeting agendas are in Appendix D. Sign-in sheets are available from the Office of Emergency Services on request. In developing the plan, the team followed the following steps:

- Planning Team formation – 2024
    - Planning Team kick-off meeting for the 2024 TRMHMP update – September 11, 2024.
- Preliminary research on existing Trinidad Rancheria plans and risk assessments – Beginning August 13, 2024.
    - The 2019 TRMHMP was set as the baseline for the revision.
        - The layout and format were changed to reflect guidance such as FEMA's Tribal Mitigation Planning Handbook (2018) and FEMA's Tribal Mitigation Plan Review Guide (December 5th, 2018).
        - Ultimately, the elements of FEMA's Tribal Mitigation Plan Review Guide were chosen as the organization structure to increase clarity and simplicity.
        - Hazard profiles were expanded based on the Tribe's 2023 THIRA/SPR effort.
    - Trinidad Rancheria Emergency Operations Plan
        - Provided information about hazards as well as capabilities, roles, and responsibilities during disasters.
    - Trinidad Rancheria Comprehensive Community-Based Plan
        - Provided Trinidad Rancheria history, description, borders, and information regarding planned future growth.
    - Trinidad Rancheria Tribal Environment Plan
        - Provided information about natural resources as well as maps.
    - Trinidad Rancheria Integrated Management Plan
        - Provided analysis for integrating natural resources into other planning efforts.
    - Energy and Mineral Development Plan
        - Provided information about low impact development.
    - Chemical Response Plan

        - Provided information about potential hazards, vulnerabilities, and capabilities.
    - Long Range Transportation Plan and Comprehensive Safety Action Plan
        - Provided information about the historical road washouts, "current" road conditions, and informed the probability of future washouts, especially along the critical Scenic Drive.
    - Waterfront Operations Plan (Area of Special Biological Significance - ASBS)
        - Provided information about critical species in Trinidad Bay as well as Trinidad Rancheria's responsibility regarding safeguarding the water quality.
    - Trinidad Rancheria 2016 Nonpoint Source Pollution Management Program Plan
        - Provided information about the watershed, drainage, and maps.
- FEMA Approved Mitigation Plans (County, City, Tribal)
    - State of California Enhanced HMP.
    - Elements of the State of California Hazard Mitigation Plan were incorporated, such as specific geological studies.
    - Humboldt County HMP
        - While the Tribe desires to maintain its own TRMHMP, Trinidad Rancheria expressed an interest in being aligned with Humboldt County.
        - Various elements were adopted such as the County general descriptions, natural hazard considerations, etc.
- Reviewed other external plans and assessments
    - Humboldt County Wildfire Protection Plan
        - Provided information regarding the fire hazard areas that Trinidad Rancheria occupies as well as fire prevention actions in Humboldt County at large.
    - Gulf of the Farallones and Cordell Bank National Marine Sanctuaries Advisory Council "Climate Change Impacts" report.
        - Provided climate change impact information of the various hazards in the Hazard Identification and Risk Assessment.
        - Provided detailed information regarding sea level rise and coastal erosion, including hazard maps.
    - State of California My Hazards Tool
        - Provided an overview and some graphics of earthquake, flood, fire, and tsunami risk.
    - Hazards-United States (Hazus)

        - Used to both map vulnerable areas/facilities and identify the magnitude of risks.
    - FEMA Disaster Data Visualization Tool
        - Provided historical information about the types, number, frequency, and times of year for past Federally declared disasters.
    - FEMA's National Risk Index was used where it was applicable (the county and census tract levels typically do not provide great fidelity to small jurisdictions such as Trinidad Rancheria).
    - FEMA's Resilience Analysis and Planning Tool (RAPT) tool was used extensively.
    - The CDC's Social Vulnerability tool was used.
    - Historical research and current wildfire events
        - Provided information about non-Federally declared disasters.
        - Current and recent events provided information about the trend of increasing intensity of disaster in California, especially fire.
    - Online, electronic, and hard-copy surveys (Appendix B)
        - Provided demographic information for the whole community participation.
        - Provided whole community input regarding the location, extent, and probability of the hazards of most concern.
        - Provided information to prioritize the hazards of most concern.
- Site visits – September 10-13, 2024.
    - Interviews (Appendix C) - September 11-13, 2024.
    - Public meeting – September 12, 2024.
    - Tribal Leadership meeting – September 11, 2024.
    - Trinidad Rancheria OES Team meetings – September 11-13, 2024.
    - Workshop and meeting flyers, agendas, and sign in sheets - Appendix D
- Draft TRMHMP plan reviews
    - First draft plan review – November -15-20, 2024
    - Second draft plan review – December 04-19, 2024
    - Final Plan Review - January XX-XX, 2024

Section I: The Planning Process

The Planning Team

Trinidad Rancheria Multi-Hazard Mitigation Plan is the result of a collaborative effort among the Trinidad Rancheria OES Team, department directors, and the whole community (Table 3). The Transportation and Land Use Director served as the Tribal Project Manager and played a key role in the development of goals and action items.

The Trinidad Rancheria OES Team convened regularly to guide development of the Multi-Hazard Mitigation Plan. The Team played an integral role in developing the mission, goals, and action items for the mitigation plan. The Team consisted of the Tribal CEO, Tribal Council members, Departmental Managers/Directors, staff of the Trinidad Rancheria, and Tribal members.

Trinidad Rancheria's Chief Executive Officer (CEO) designated the Trinidad Rancheria OES Team as the core personnel for developing the TRMHMP (Table 3). The Trinidad Rancheria OES Team, led by the Tribal Chief Executive Officer (CEO), has the authority and responsibility to address hazards, develop the mitigation plan, organize resources, find appropriate funding, and oversee the activity for implementation, monitoring, and evaluation. Due to the various members' work with external partners, they have established relationships to form the baseline of a whole community approach. For example, OES Team members participated in Humboldt County OES meetings and participated in such efforts as the Redwood Coast Tsunami Workgroup.

Table 3. Planning Team Members.

Name	Role	Contribution
Jacque Hostler-Carmesin	Trinidad Rancheria CEO	Overall Oversight
Leslie Sanders	Transportation and Land Use Director	Tribal Project Manager
Tyler Felt	Emergency Operations Tech 1	Project Management
Angie Higley	Tribal CFO	Financial Oversight
Amy Atkins-Kelley	Executive Manager	Tribal Operations SME
Ron Sundberg	Natural Resource Director	Environmental SME
Rachel Sundberg	Tribal Programs Director/Tribal Historic Preservation Officer	Tribal Services, Natural & Cultural SME.
Rachel Veiga	Tribal Programs Housing Director	Tribal Housing SME
Billy Gritts	Cher-Ae Heights Casino Security Chief	OES Coordination and Casino Enterprise SME
Casey Box	Harbor Business Director	Harbor Operations SME

Section I: The Planning Process

C. Public Partnership

Element	Requirements
A2. Does the plan document an opportunity for public comment during the drafting stage and prior to plan approval, including a description of how the Tribal government defined "public"? **44 CFR § 201.7(c)(1)(i)** ***Intent: To ensure that Tribal members understand what the Tribal government is doing on their behalf and to provide a chance for input.***	a. The plan shall describe how the Tribal government defined "public." For example, "public" is sometimes defined as including only Tribal membership, or Tribal citizens. It might also be identified as those living on Tribal land or in the Tribal service area. Tribal members/citizens who do not live on the Tribal lands may also want to provide input or comment on the plan. b. The plan shall describe how the public was given the opportunity to be involved in the planning process and how their feedback was incorporated into the plan. Examples of public involvement include, but are not limited to, interactive websites with drafts for public review and comment, questionnaires or surveys, or booths at community events. *An **opportunity to be involved in the planning process** means that the public is engaged or invited as participants and given the chance to provide input that may affect the plan's content.* The opportunity for participation shall occur during plan development, which is prior to the comment period on the final plan and prior to plan adoption/approval.

1. The Public

In addition to Tribal staff, the internal public includes Tribal members (living both on and off Trinidad Rancheria lands), non-Tribal members living on Tribal land, and non-Tribal staff who work at the various Trinidad Rancheria enterprises. External partners include citizens and local governments to include the City of Trinidad, Humboldt County, the State of California, the Federal government (FEMA, the Bureau of Indian Affairs, Environmental Protection Agency, etc.), and surrounding Tribal nations. In addition, public partners include private sector enterprises (especially Trinidad Rancheria vendors and Tribal enterprise customers), academia such as California State Polytechnic University, Humboldt, non-profit and volunteer agencies, and other organizations such as the Redwood Coast Tsunami Workgroup. One component of Trinidad Rancheria's public outreach was a risk assessment survey (Appendix B). The survey was available online as well as provided directly to the public as a Microsoft Word document via both soft-copy and hard-copy. Those taking the survey were asked to identify themselves

according to common occupations in Humboldt County, their Tribal affiliation, and/or their residency. Table 4 is the list of categories by which those taking the survey could identify themselves. Those taking the survey could select multiple options as well as write in additional identifiers.

Table 4. Public Outreach Partner Categories.			
Agriculture	Forestry	Leisure / Entertainment	Retail trade
Construction	Government - city	Mining (quarrying, oil, gas)	Science
Education - College	Government - county	Natural Resources	Transportation and warehousing
Education K-12	Government - Federal	Non-profit Organization	Tribal Member
Emergency Management	Government - state	Non-Tribal member residing or working on Tribal land/businesses	Utilities
Facility Maintenance	Government – tribal nation	Parks and Recreation	Volunteer Organization
Faith-based community	Health and social services	Planning	Wholesale trade
Finance and Insurance	Hunting	Professional, technical services	Other services
Firefighting	Information	Public Works	
Fishing	Law Enforcement	Real Estate renting and leasing	

In addition, participants were given the opportunity to identify as having disabilities and/or access and functional needs (AFN) or working with those who work with the AFN population.

2. Public Involvement

The public was afforded the opportunity to engage in the planning process through multiple means:

- Online Risk assessment survey beginning August 13, 2024.
- Microsoft Word-based risk assessment survey beginning August 13, 2024.
    - Soft copy emailed
    - Hard copy directly from the Trinidad Rancheria Project Manager
- Tribal member workshop – September 11, 2024.
- Whole community public workshop – September 11, 2024.
- Interaction through ongoing whole community meetings such as regular Humboldt County Office of Emergency Services, Humboldt Community Organizations Active in Disaster (COAD), and the Redwood Coast Tsunami working group
- Publicly available draft plan

- Electronic beginning November 19, 2024.
- Posted on the Trinidad Rancheria website on December 16, 2024 - https://trinidad-rancheria.org/news-announcements/.

Figure 2 highlights the backgrounds of survey participants and Figure 3 describes their experience working with people with disabilities and others with access and functional needs (AFN). While sign-in sheets are available on request from OES, agendas are in Appendix D. Those who completed the survey, identified with:

- Fourteen (14) Individuals took the pre-workshops survey

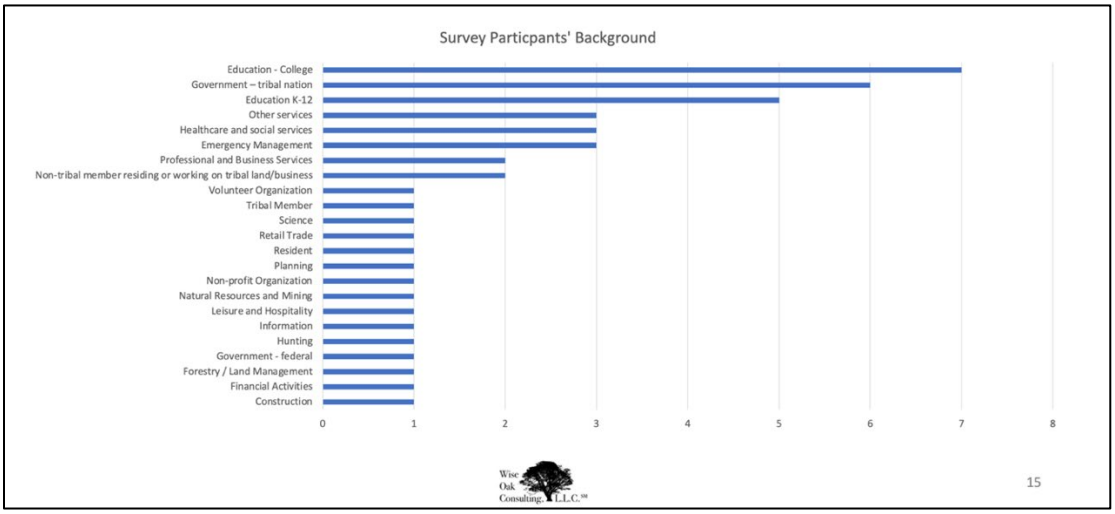


Figure 2. Risk Survey Participants.

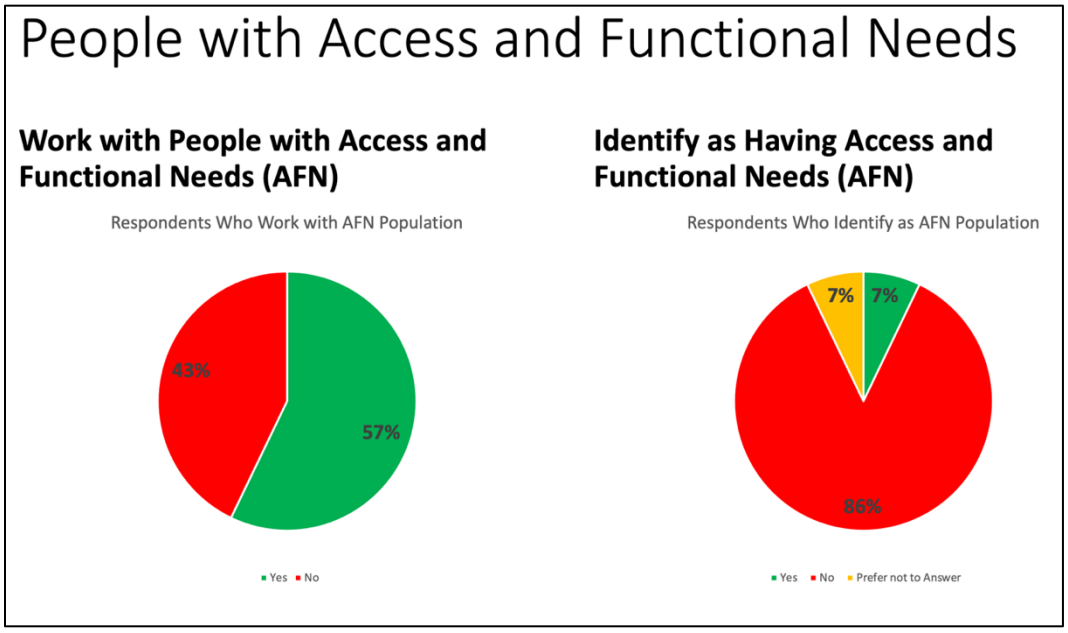


Figure 3. Risk Survey Participants' Experience with Access and Functional Needs.

3. Incorporation of Public Feedback

Public feedback informed the TRMHMP update during all phases:

- **Organizing the planning process and resources** – public experience garnered since the last plan update led to such outcomes as including coastal erosion, sea level rise, marine animal disease (Domoic Acid/Toxic Algae Blooms/ (ASP), and climate change as specific considerations. In addition, the Tribe's development of its eco-friendly pier that catches and treats all runoff as well as public workshops in the crafting of the Trinidad Rancheria Comprehensive Plan informed the TRMHMP update.

- **Assessing Risks** – multiple versions of the risk assessment survey (Appendix B) were used to collect and incorporate public information in two ways. First, public input was used to establish the final location, extent, and probability values. Second, public input was used to vote on the hazards that most concern Trinidad Rancheria. Table 5 shows the mathematical values for each factor. The final ranked score was based on the following methodology:

Table 5: Threat and Hazard Scoring Methodology.

Location		Extent		Probability		Concern	
Description	Weight	Description	Weight	Description	Weight	Description	Weight
Extensive	3	Catastrophic	4	Highly Likely	4	Very High	5
Moderate	2	Critical	3	Likely	3	High	4
Limited	1	Limited	2	Possibly	2	Moderate	3
		Negligible	1	Unlikely	1	Low	2
						Very Low	1

The results for each assessment category were summed to arrive at a total score for each threat/hazard. The hazard identification and risk assessment resulted in the prioritized natural hazards of most concern shown in Table 6, technological hazards of concern in Table 7, and human-caused threats of concern in Table 8.

Table 6. Natural Hazards of Greatest Concern.						
Threat/Hazard	**Location**	**Extent**	**Probability**	**Concern**	**Sum**	**Rank**
Landslide	42	53	56	63	214	1
Coastline Erosion	42	47	57	62	208	2
Earthquake	43	51	55	57	206	3
Severe Winter Storms	41	49	54	61	205	4
Tsunami	33	43	42	49	167	5
Sea Level Rise	32	40	43	46	161	6
Wildfires	32	38	38	45	153	7
Epidemic	37	38	38	35	148	8
Marine Animal Disease	32	36	38	42	148	9
Drought	30	32	41	40	143	10
Flood	27	34	39	40	140	11
Smoke	30	29	40	39	138	12
Land Animal Disease	19	23	29	27	98	13

Table 7: Trinidad Rancheria's Technological Hazards of Greatest Concern.						
Hazard	**Location**	**Extent**	**Probability**	**Concern**	**Sum**	**Rank**
Power Failure	39	48	56	57	200	1
HAZMAT Release - Marine	35	44	44	54	177	2
Structure Fire	33	42	34	47	156	3
Transportation Accident	25	37	43	47	152	4
HAZMAT Release - Land	27	40	35	45	147	5

Table 8: Trinidad Rancheria's Human-Caused Threats of Greatest Concern.						
Threat/Hazard	**Location**	**Extent**	**Probability**	**Concern**	**Sum**	**Rank**
Armed Assault	27	46	38	62	173	1
Cyberattack (Data)	35	42	36	58	171	2
Cyberattack (Infrastructure)	34	45	34	58	171	3
Sabotage	29	41	30	49	149	4
Biological Attack	20	41	41	39	141	5

- **Developing a Mitigation Strategy** – interviews (Appendix C) and workshops during site visits were used to collect input regarding mitigation strategy elements. The public forums were used to establish goals, objectives, resources, and prioritized actions.
- **Adopting and Implementing the Plan** – the Trinidad Rancheria public information requirements ensured there were multiple means of notification for meetings with Planning Team members and Tribal Council, public workshops, and review of documents, including the final TRMHMP before Tribal Council adoption.

Section I: The Planning Process

4. Involving Neighboring Communities, Tribal, and Regional Agencies

Element	Requirements
A3. Does the plan document, as appropriate, an opportunity for neighboring communities, Tribal and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, as well as other interests to be involved in the planning process? **44 CFR § 201.7(c)(1)(ii)** ***Intent: To demonstrate a deliberative planning process that involves the appropriate Tribal members and partners for the Tribal planning area that have the experience and information needed to develop the plan, as well as the responsibility or authority to make decisions and implement hazard mitigation activities.***	a. The plan shall identify all Tribal members/citizens, and partners who were given an opportunity to be involved in the planning process. During plan review, it is important for the reviewer to consider that variations in Tribal capability and/or cultural practice may influence participation. The plan shall identify how Tribal members/citizens and partners were invited to participate in the process.

Internally, Trinidad Rancheria advertised information about each step of the planning process through their normal monthly communication outreach to Tribal members. Department Directors/Managers were specifically invited to workshops during site visits. The Planning Team also conducted interviews (Appendix C) with department directors as well as their staff.

Externally, the OES team provided notifications and updates to such partners as:

- Humboldt County OES
- Humboldt County Association of Governments (HCAOG)
- City of Trinidad
- North Coast Tribal Transportation Commission
    - 11 Tribes located in Humboldt and Del Norte County
- Notices via Trinidad Rancheria Facebook page
- On Trinidad Rancheria website - https://trinidad-rancheria.org/news-announcements/

Trinidad Rancheria staff attend regular coordination meetings with their respective partners. The staff invited their external partners to participate through a variety of means - in-person, email correspondence, and physical handouts/flyers. In addition to various locations around Trinidad Rancheria, flyers for the public workshop were also physically posted at the Humboldt County OES facility.

Section I: The Planning Process

D. Integration with Other Trinidad Rancheria Planning Efforts

Element	Requirements
A4. Does the plan describe the review and incorporation of existing plans, studies, and reports? **44 CFR § 201.7(c)(1)(iii)** ***Intent: To identify existing data and information, shared objectives, and past and ongoing activities that can help inform the mitigation plan.***	a. The plan shall describe *what* existing plans, studies, and reports were reviewed. *Examples of the types of existing sources reviewed may include, but are not limited to, natural resources plans; housing plans; analyses or studies from Tribal departments, neighboring Tribe, colleges, universities, and academic institutions; socioeconomic or building information from Tribal comprehensive plans; results from hazard-specific studies, plans for sacred sites, or hazard data or plans from tribal, federal, regional, state, or local agencies.* b. The plan shall document *how* relevant information was incorporated into the mitigation plan. ***Incorporate** means to reference or include information from other existing sources to develop the content of the mitigation plan.*
A5. Does the plan include a discussion on how the planning process was integrated, to the extent possible, with other ongoing Tribal planning efforts as other FEMA programs and initiatives? **44 CFR § 201.7(c)(1)(iv)** ***Intent: To identify how the Tribal government leveraged any other planning activities or FEMA programs to accomplish hazard mitigation and reduce risk.***	a. The plan shall describe how the Tribal government integrated the current planning process and/or findings with other ongoing Tribal planning efforts. ***Planning efforts** means governance structures that are used to manage land use and development and other Tribal government decision-making, such as Tribal master plans, capital improvement plans, natural and/or cultural resource plans, plans for sacred sites, emergency operations plans, and/or other long-range plans.* b. The plan shall describe how the Tribal government integrated the current planning process with other FEMA programs and initiatives. *Examples of other FEMA programs and initiatives include, but are not limited to, the National Flood Insurance Program (NFIP), HMA grant programs, Threat and Hazard Identification and Risk Assessment (THIRA), and recovery programs.* ***To the extent possible** means that consideration will be given to the inherent differences in governance and capabilities among tribal governments.*

Section I: The Planning Process

The Trinidad Rancheria's Multi-Hazard Mitigation Plan (TRMHMP) is just one of a family of disaster preparedness-related plans the Tribe is completing. The Tribe developed this TRMHMP update using a holistic approach in consideration of the National Preparedness System (NPS) as shown in Figure 4. As highlighted in Figure 4, Trinidad Rancheria is simultaneously developing its TRMHMP, Threat and Hazard Identification and Risk Assessment (THIRA), and its Stakeholder Preparedness Review (SPR). By doing so, Trinidad Rancheria is ensuring the hazards, threats, vulnerabilities, and capabilities are consistent across the three assessments. In addition, Trinidad Rancheria is realizing efficiencies by not conducting separate assessments. Trinidad Rancheria intends to closely follow the TRMHMP, THIRA, and SPR with an update of its Emergency Operations Plan (EOP), and Continuity of Operations Plan (COOP).

The Building Resilient Infrastructure and Communities grant is one example of the NPS element "Building and Sustaining Resources." Another action under this element is the Tribal Homeland Security Grant Program, which requires the completion of a THIRA, SPR, and Integrated Preparedness Plan (IPP). Once Trinidad Rancheria has an updated EOP and a COOP plan, it will continue around the National Preparedness System to "Validating Capabilities" through exercises and then "Reviewing and Updating" all these efforts regularly – including updating this hazard mitigation plan as required.

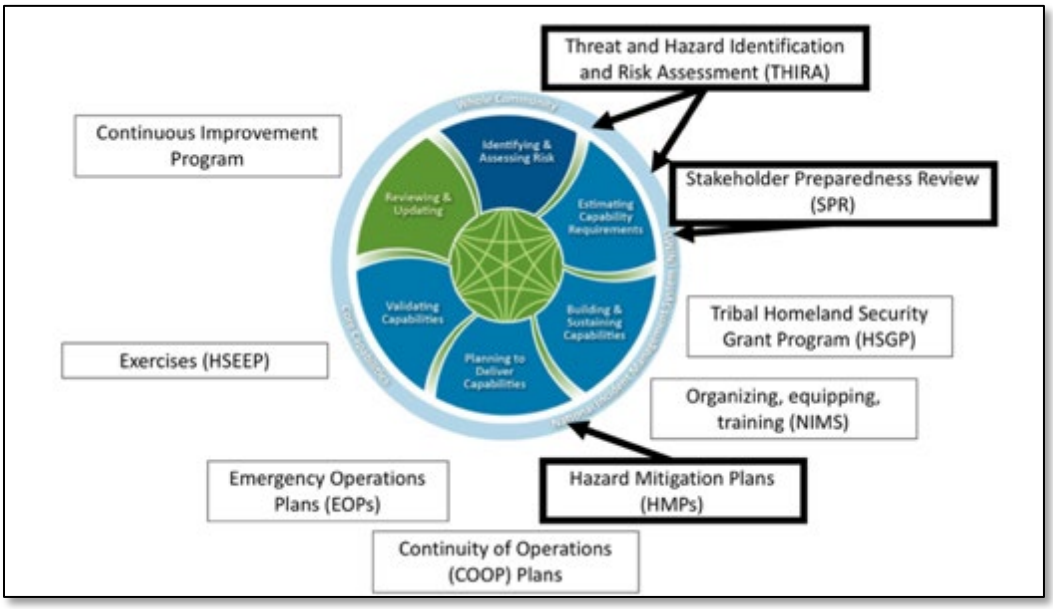


Figure 4. National Preparedness System and Representative Actions.

Section I: The Planning Process

E. Method and Schedule for Keeping the Plan Current: How, When, and Who will Evaluate the Plan

Element	Requirements
A6. Does the plan include a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within the plan update cycle)? **44 CFR § 201.7(c)(4)(i)** ***Intent: To establish a process for the Tribal government to track the progress of the plan's implementation and ensure the plan remains current and viable.***	a. The plan shall identify how, when, and by whom the plan will be monitored. ***Monitoring*** *means tracking the relevance and implementation of the plan over time and includes all elements of the plan.* b. The plan shall identify how, when, and by whom the plan will be evaluated. ***Evaluating*** *means assessing the effectiveness of the plan at achieving its stated purpose and goals.* c. The plan shall identify how, when, and by whom the plan will be updated. ***Updating*** *means reviewing and revising the plan at least once every 5 years.* The plan shall include the title of the individual or name of the department/agency responsible for leading these efforts.

1. How, When, and Who will Monitor the Plan

This plan, and the accomplishment of action items defined in it, will be monitored by the Planning Team. Specifically, Objective #4.3 states, "Build hazard mitigation concerns into the Tribal planning and budgeting process." Action #4.3.1 states, "Develop a review procedure to ensure mitigation is incorporated into applicable plans and budgets. In addition, Action #5.2.2 states, "Continue to update as required and needed, emergency plans including: FEMA Hazard Mitigation Plan, Comprehensive Emergency Management Plan, Continuity of Operations Plan, Disaster Recovery Plan, Debris Management Plan, Individual Households, and Special Needs Assistance Plan."

Led by the Trinidad Rancheria Emergency Operations Technician, the Planning Team will regularly report their progress in accomplishing their assigned actions. Tables 49-51 assign responsibility for completing actions to various departments/programs. In addition to regularly scheduled Planning Team meetings, progress reports will be provided to the Tribal Council at least semi-annually and to the public annually (Table 49).

2. How, When, and Who will Evaluate the Plan

At least semi-annually, the Planning Team, led by the Trinidad Rancheria Emergency Operations Technician, will evaluate the effectiveness of the plan and the achievement of planned actions and objectives. If the achievement of actions and objectives are on target, then no remedial actions are necessary. If the accomplishment of actions and objectives deviates from the plan (either positively or negatively), then the Planning Team will decide one of two causes and remedial changes:

- The plan is sound, but the execution of the action is faulty. In this case, a remedy for the action accomplishment is dictated.
- The remedial action is being accomplished according to plan, but the desired effects are incorrect based on wrong planning assumptions, conditions, or a change in circumstances. In this case, a modification of the plan may be warranted.

3. How, When, and Who will Update the Plan

If correctly executed actions are not achieving the desired effect (for whatever reason), an immediate change in the plan may be warranted. This could occur in circumstances of the risk management strategy of risk transfer. In this case, a plan adjustment may be required. Outside of corrective actions, the Planning Team will begin the process of updating this plan 2.5 years after its adoption. This allows approximately 12 months to contract for support or garner other planning resources required to begin. At the four-year point, the next plan update will begin and follow a nominal one-year planning process to have the next plan revision complete by the five-year point.

Table 9. Plan Monitoring, Evaluating, and Updating Schedule.

Plan Monitoring	Point of Contact	Timeline
Planning Team action item accomplishment review	The respective POC responsible for each action item	Semi-annual Planning Team meetings
Tribal Council action item accomplishment report	Planning Team	Semi-annual Tribal Council progress report
Public action item accomplishment review	Planning Team	Annual public progress report
Ad hoc plan updates	Planning Team	As required to ensure the plan is relevant
FEMA-required five-year update	Planning Team	Every five years

Section I: The Planning Process

F. Continued Public Participation

Element	Requirements
A7. Does the plan include a discussion of how the Tribal government will continue public participation in the plan maintenance process? **44 CFR § 201.7(c)(4)(iv)** ***Intent*: To identify how the public will continue to have an opportunity to participate in the plan's maintenance and implementation over time.**	a. The plan shall describe how the tribal government will continue to seek public participation after the plan has been approved and during the plan's maintenance process. *Examples include, but are not limited to, periodic presentations on the plan's progress to Tribal officials, schools, or other Tribal groups; annual questionnaires or surveys; Tribal gatherings; and/or postings on social media and websites.*

Trinidad Rancheria's strategic Goal #3 is to, "Increase Public Awareness of Local Hazards." There are multiple objectives and actions under this goal for the Tribe to accomplish (Table 10). Trinidad Rancheria will use its standardized processes for communicating with Tribal members about mitigation actions such as its monthly information packets sent out via email and printed materials. Information about significant events is also posted in high traffic areas at the Tribal Office. Trinidad Rancheria also holds monthly Community Council meetings to provide updates and solicit input.

Table 10. Public Participation Objectives and Actions.

Obj. #	Objective	Action
3.1	Increase public awareness and understanding, support, and demand for hazard mitigation.	**Action 3.1.1:** Hold annual public meetings (and publish the results) to update the community on the status of Trinidad Rancheria's hazard mitigation actions.
3.2	Heighten public awareness of the full range of hazards they may face.	**Action 3.2.1:** Engage in FEMA's semi-annual preparedness month activities (September and April) to move community members from awareness to action.
3.3	Publicize and encourage the adoption of appropriate hazard mitigation measures.	**Action 3.3.1:** Hold semi-annual community-based hazard mitigation days such as fire defensible space cleanup and winter storm preparation.

Externally, Planning Team members will continue to participate in local, state, and Federal activities that support this plan. Enhance "Partnerships and Implementation" is a strategic goal with such actions as attending/hosting local mitigation-related events (Table 11).

Table 11. Partnerships and Implementation Objectives and Actions.		
Obj. #	**Objective**	**Action**
4.1	Build and support local partnerships with stakeholders in the community.	**Action 4.1.1:** Attend and/or host Humboldt Operational Area disaster preparedness events. Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events.
4.2	Build a team of committed volunteers to safeguard the community before, during, and after a **disaster.**	**Action 4.2.1:** Develop a Tribal Community Emergency Response Team (CERT) program or join a multi-jurisdictional CERT program.
4.3	Build hazard mitigation concerns into the Tribal planning and budgeting process.	**Action 4.3.1:** Make hazard mitigation concerns standard agenda/document items.

II. Hazard Identification and Risk Assessment

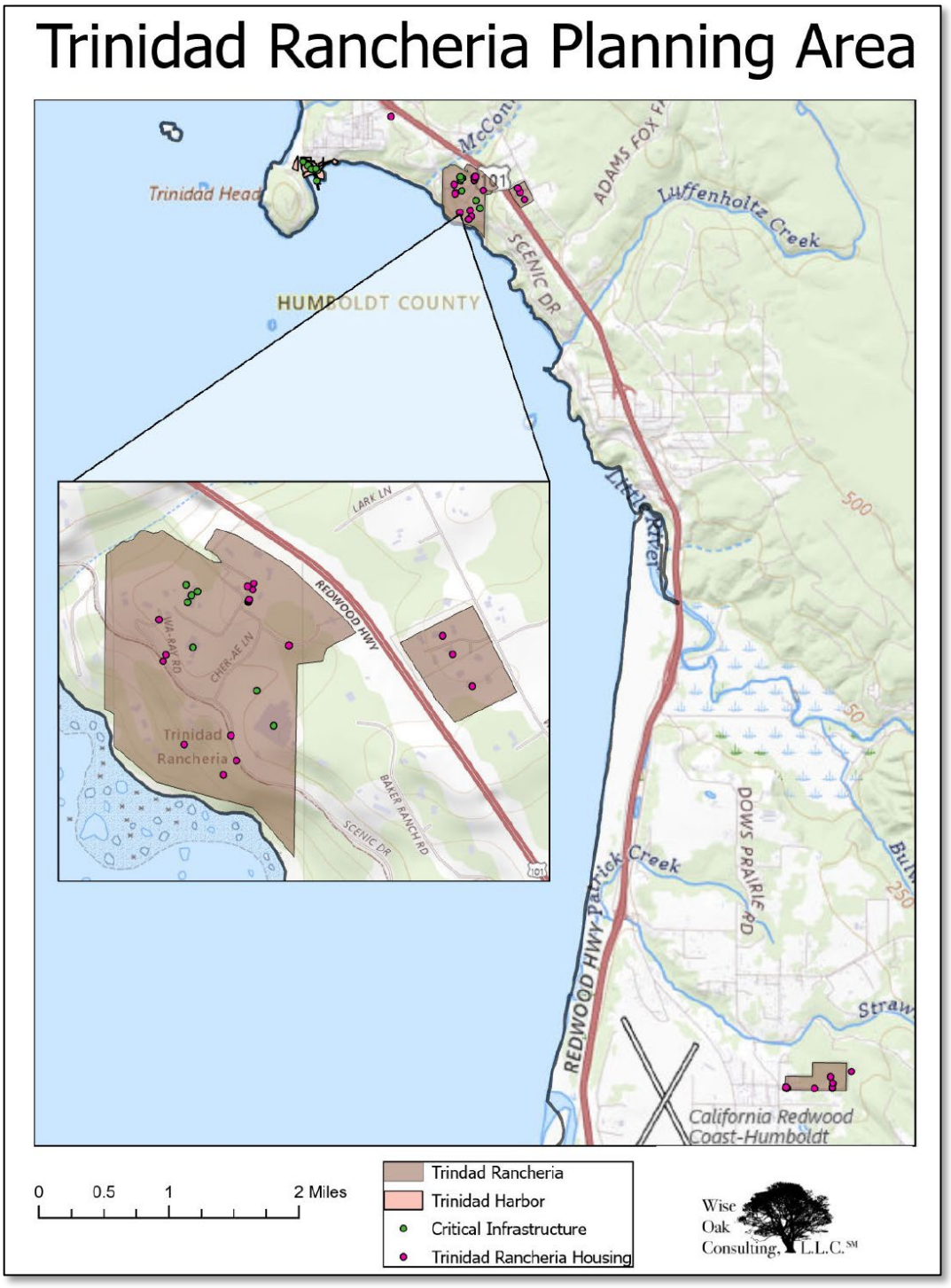


Figure 5. Trinidad Rancheria Planning Area.

Section II: Hazard Identification and Risk Assessment

A. The Planning Area

This plan update encompasses current and planned trust lands and fee properties, including buildings infrastructure, natural and cultural/historical resources, Tribal members, staff, and visitors (Figure 5).

Element	Requirements
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the Tribal planning area? 44 CFR § 201.7(c)(2)(i) ***Intent:*** *To understand the natural hazards affecting the Tribal planning area in order to identify which hazard risks are most significant and which locations are most adversely affected.*	a. The plan shall include a description of the Tribal planning area (See footnote 6 on page 7). b. The plan shall include a description of the natural hazards that can affect the Tribal planning area. *(Note: There is no requirement to include manmade hazards in the mitigation plan. FEMA will not require removal of this information, but if these hazards are included, they will not be reviewed to meet the requirements).* c. The plan shall provide the rationale for the omission of any natural hazards that are commonly recognized to affect the Tribal planning area. d. The description shall include information on the location and the extent of each identified hazard. ***Location*** *means the geographic areas in the Tribal planning area that are affected by the hazard. For many hazards, maps are the best way to illustrate location. However, location may be described in other formats. For example, if a geographically- specific location cannot be identified for a hazard, such as tornadoes, the plan may state that the entire Tribal planning area is equally at risk to that hazard.* ***Extent*** *means the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence based on a scientific scale (e.g., Enhanced Fujita Scale, Saffir-Simpson Hurricane Scale, Richter Scale, flood depth grids) and/or other hazard factors, such as the duration and/or speed of onset. Extent is not the same as impacts, which are described in sub-element B3.*

Section II: Hazard Identification and Risk Assessment

1. About the Cher-Ae Heights Indian Community of the Trinidad Rancheria (Trinidad Rancheria)

The Cher-Ae Heights Indian Community of the Trinidad Rancheria is a federally recognized tribe whose membership is primarily Yurok with ancestral ties to the Wiyot, Tolowa, Chetco, Karuk and Hupa peoples. While they share similar cultural and historical traditions, each Tribe has a distinct heritage. The Rancheria is within the ancestral territory of the Yurok peoples and is in an area of great cultural significance to the Trinidad Rancheria and other local Tribal entities. The core land holdings of the Rancheria are located on a coastal bluff west of U.S. Highway-101 just southeast of the town of Trinidad, which is about 25 miles north of Eureka. The Trinidad Rancheria was established in 1906 by an act of the U.S. Congress that authorized the purchase of small tracts of land for "homeless Indians". In 1908, 60 acres of land were purchased on Trinidad Bay to accommodate the Tribe. The Tribe's Federal Recognition was granted by the Department of the Interior in 1917. Between 1950 and 1961, the Trinidad Rancheria approved home assignments on the reservation and enacted their original Articles of Association. In 2008, the Tribe passed a new constitution that replaced the original Articles of Association and has increased their Enrolled Membership to 280 Tribal members. The Trinidad Rancheria is an impoverished community; trust properties are comprised of five separate parcels that total approximately 108 acres, located in the towns of Trinidad, Westhaven, and McKinleyville.

The Tribal planning area includes the lands upon which the Tribal government is authorized to govern, develop, or regulate (Figure 5). These lands may include, but are not limited to, lands within the reservation and off-reservation lands owned by, managed by, or held in trust for the Tribal government, allotted trust land, and fee land. These lands may be either contiguous or noncontiguous and for multi-jurisdictional planning may include other Tribes or non-Tribal jurisdictions.

a) Trinidad Rancheria Main Parcel

The largest parcel, consisting of 58.5 acres, is also referred to in this document as "the Main Parcel" contains 18 Tribal homes as well as the majority of administrative and departmental services. Administrative Services include all Tribal Government Operations, with Departmental Services, including Tribal Member Services; Social Services; Natural Resource Department which includes all environmental programs; Transportation and Land Use; and Emergency Operations which includes Public Safety. Additionally, the Main Parcel houses a water treatment facility, the Victim Services Center, and library. Recreational vehicle (RV) parking and Heights Casino are located on the Main Parcel and are for the benefit of both Tribal

members, the broader Trinidad area community, and visitors to the Main Parcel. (Figure 6). The property is 60 meters above sea level and has 1 coastal access road that is maintained by the Tribe and the County of Humboldt. Seven (7) Tribal homes are located on the coastal bluff, (the lowest being roughly 10.6 meters above sea level. Trinidad Rancheria receives its water from the City of Trinidad Community Service District and power from Pacific Gas and Electric. However, most of the Tribal homes utilize propane and wood to heat their homes. All of the residents that live on the Main Parcel are on septic tank and leach field systems. The Heights Casino previously was an official Red Cross Evacuation Center. Tribal Administration, the EOC/Social Services building, the casino, and Trinidad Harbor facilities all have emergency generators.

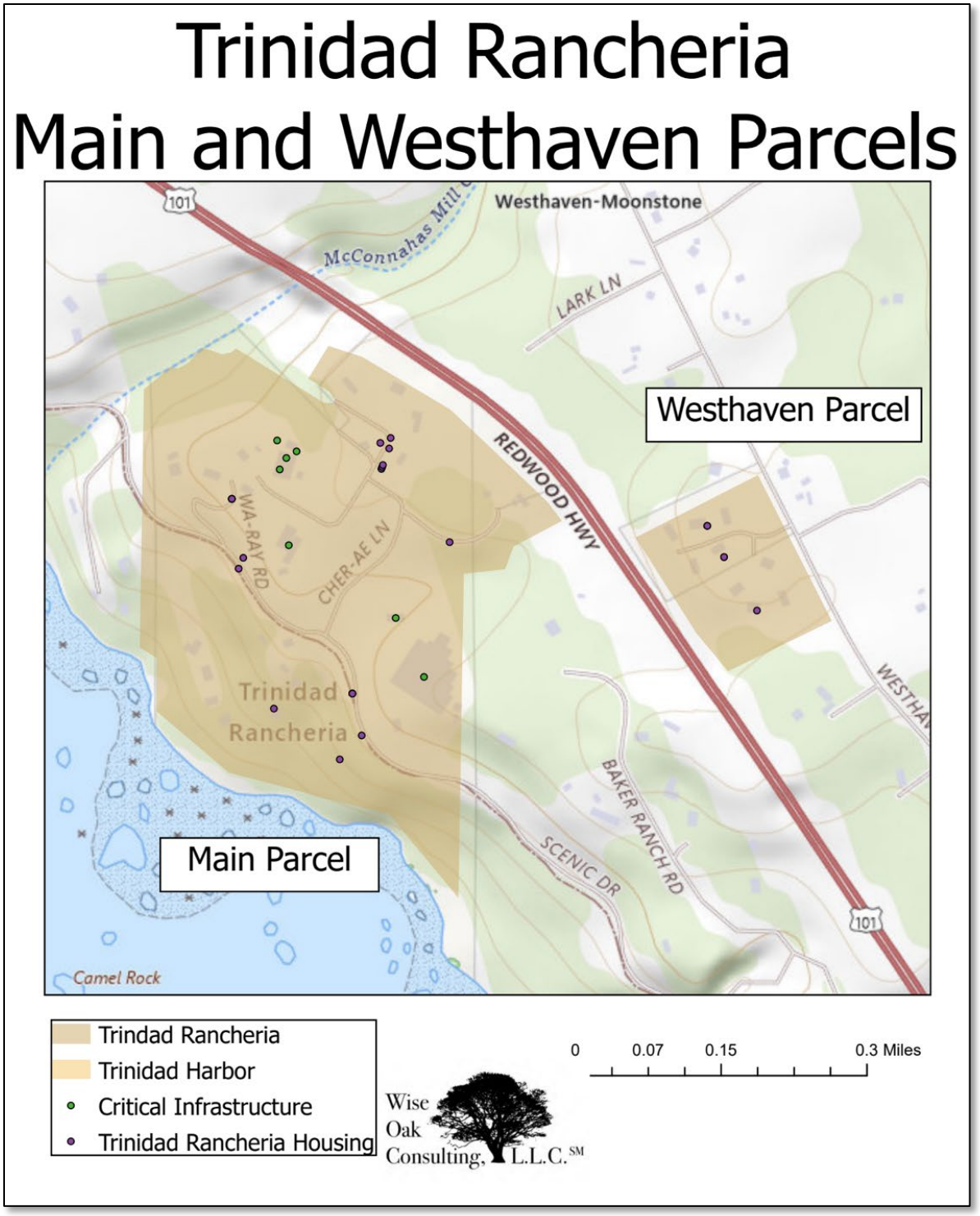


Figure 6. Trinidad Rancheria Main and Westhaven Parcels.

b) Trinidad Rancheria Westhaven Parcel

A portion of Tribal housing, located on an 8-acre parcel referred to as the Westhaven parcel, is separated from the Main Parcel of the Trinidad Rancheria by U.S. 101. An additional 5-acre parcel referred to as the Trillium parcel is also located on the east side of U.S. 101 and includes Tribal staff housing and rental housing. The Trinidad Rancheria Westhaven parcel has 11 Tribal homes, including 2 trailers (Figure 6). The property is 83 meters above sea level and is forested. Westhaven Drive is a 2-lane road that runs south to north and provides access to the Trinidad Rancheria Westhaven Housing area. Highway-101 separates the Main Parcel and the Trinidad Rancheria Westhaven Housing area. The area is serviced by the City of Trinidad and the Tribe. Westhaven receives its water from the City of Trinidad Community Service District and power from Pacific Gas and Electric although most of the Tribal homes utilize propane and wood to heat their homes. The Westhaven residential homes use multiple means for wastewater treatment.

c) Trinidad Rancheria McKinleyville Parcel

The Trinidad Rancheria McKinleyville Parcel area is 27 acres of trust land that contains 15 Tribal homes (Figure 7). The McKinleyville Parcel has an emergency water well that was drilled with money secured from the Bureau of Reclamation. The water would have to be treated before it could be utilized for drinking purposes but could be used for fire protection if needed. The property is 65 meters above sea level and is forested. Archer Road is a single access road to the Tribes trust land, which is serviced by the McKinleyville Services District and the Tribe. The McKinleyville Housing area receives its water from the McKinleyville Community Services District and its power from Pacific Gas and Electric. Each home is on an individual septic tank and leach field system. Tribal members that live in the McKinleyville Area must take Highway 101 North to get to the Main Parcel. Portions of Highway 101 are just 2.5 meters above sea level.

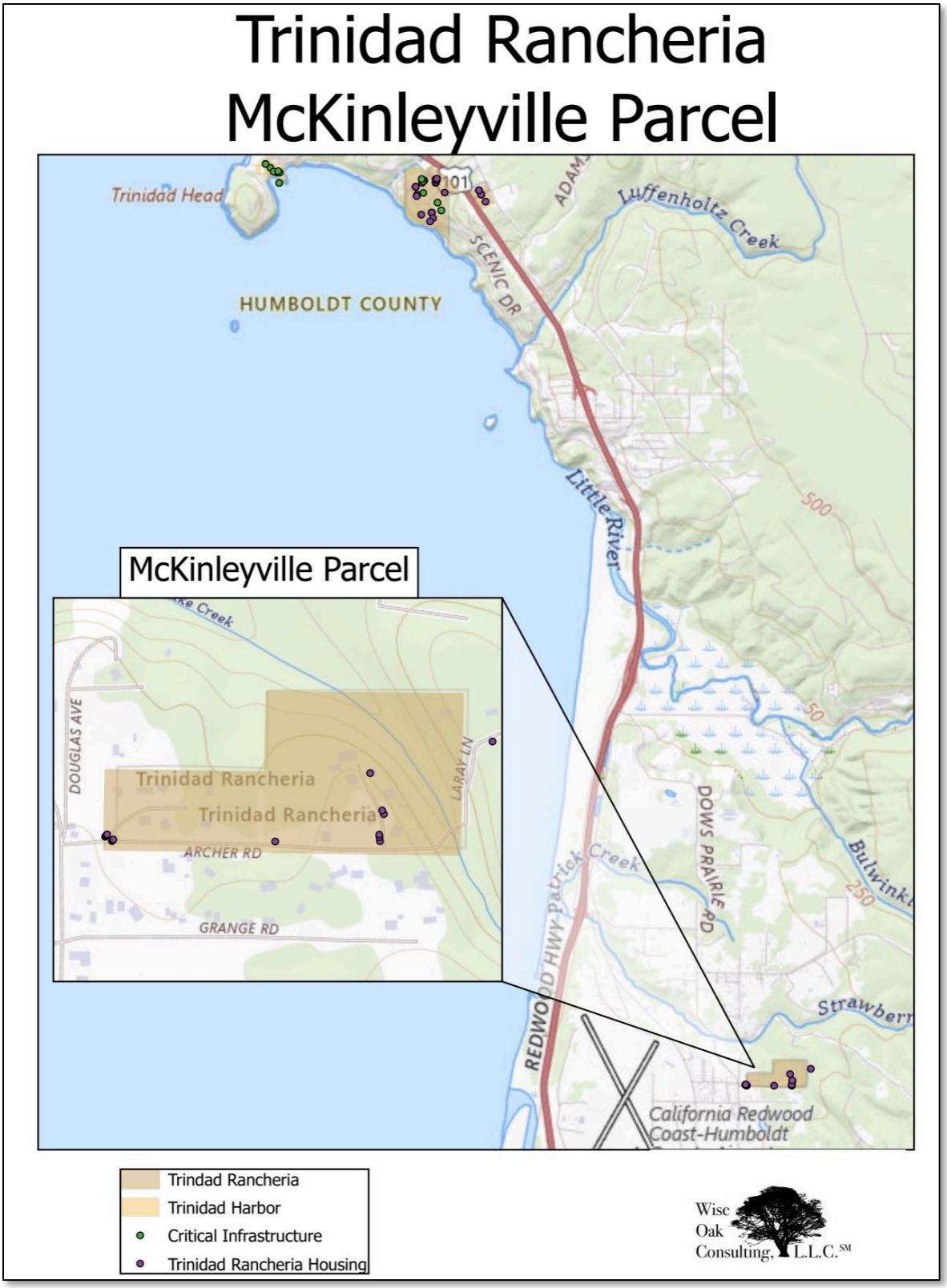


Figure 7. McKinleyville Parcel.

d) Trinidad Harbor

Trinidad Rancheria also owns approximately 9.3 acres of trust land at Trinidad Harbor that includes the Trinidad Pier, Seascape Restaurant, Seascape Wastewater Treatment Facility/Public Restrooms, the Bait Shop, a Vacation Rental, and surrounding property, most of which is 3.7 meters above sea level (Figure 8). These tidelands are part of the 34 Areas of Special Biological Significance (ASBS), ocean areas monitored and maintained for water quality by the State Water Resources Control Board. The water surrounding the Harbor supports an unusual variety of aquatic life and hosts unique individual species. The Trinidad Harbor receives its water services from the City of Trinidad and power from Pacific Gas and Electric. The Tribe also has propane backup generators installed to power the boat launch, Seascape Restaurant, and the Wastewater Facility in case the Harbor loses power.

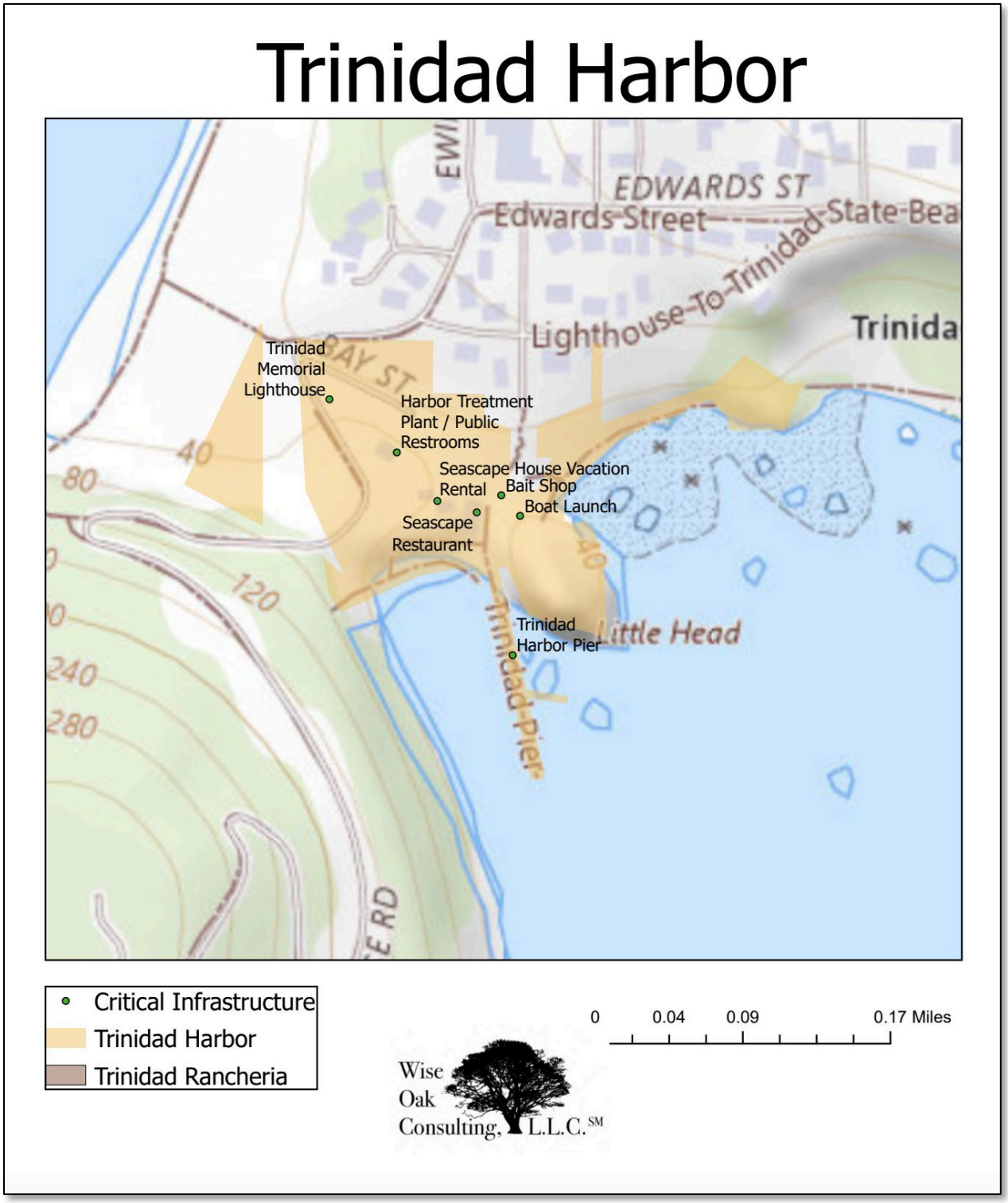


Figure 8. Trinidad Harbor.

a) Indigenous Marine Stewardship Area

Trinidad Rancheria, the Resighini Tribe of the Yurok People, and the Tolowa Dee-ni' Nation, designated the first Indigenous Marine Stewardship Area (IMSA) in the United States (Figure 9). The three Tribes agreed to collaboratively steward nearly 700 square miles (about 1,800 square kilometers) of ocean and coast from the California-Oregon border to Little River near the town of Trinidad, California. (Kimbrough, 2024) As such, Trinidad Rancheria shares the responsibility for stewardship of this area with their partners.

Figure 9. Indigenous Marine Stewardship Area.

2. Topography

The original Main Parcel is in Northern California, just south of the Redwood National Park near U.S. Highway-101, about 25 miles north of Eureka, and overlooking both the Trinidad Harbor and the Pacific Ocean. It is a landscape of coastal bluffs, redwoods, and rocky shorelines between the Pacific Ocean and the Coast Range (Figure 10).

3. Geology

Trinidad Rancheria is located on a quaternary alluvium (Figure 10), which is a certain sediment deposit often referred to as "cover." This is because underneath this layer is bed rock. The top layer is made up of clay, silt, sand, gravel, and occasionally caliche. This makes the location highly susceptible to erosion and slides.

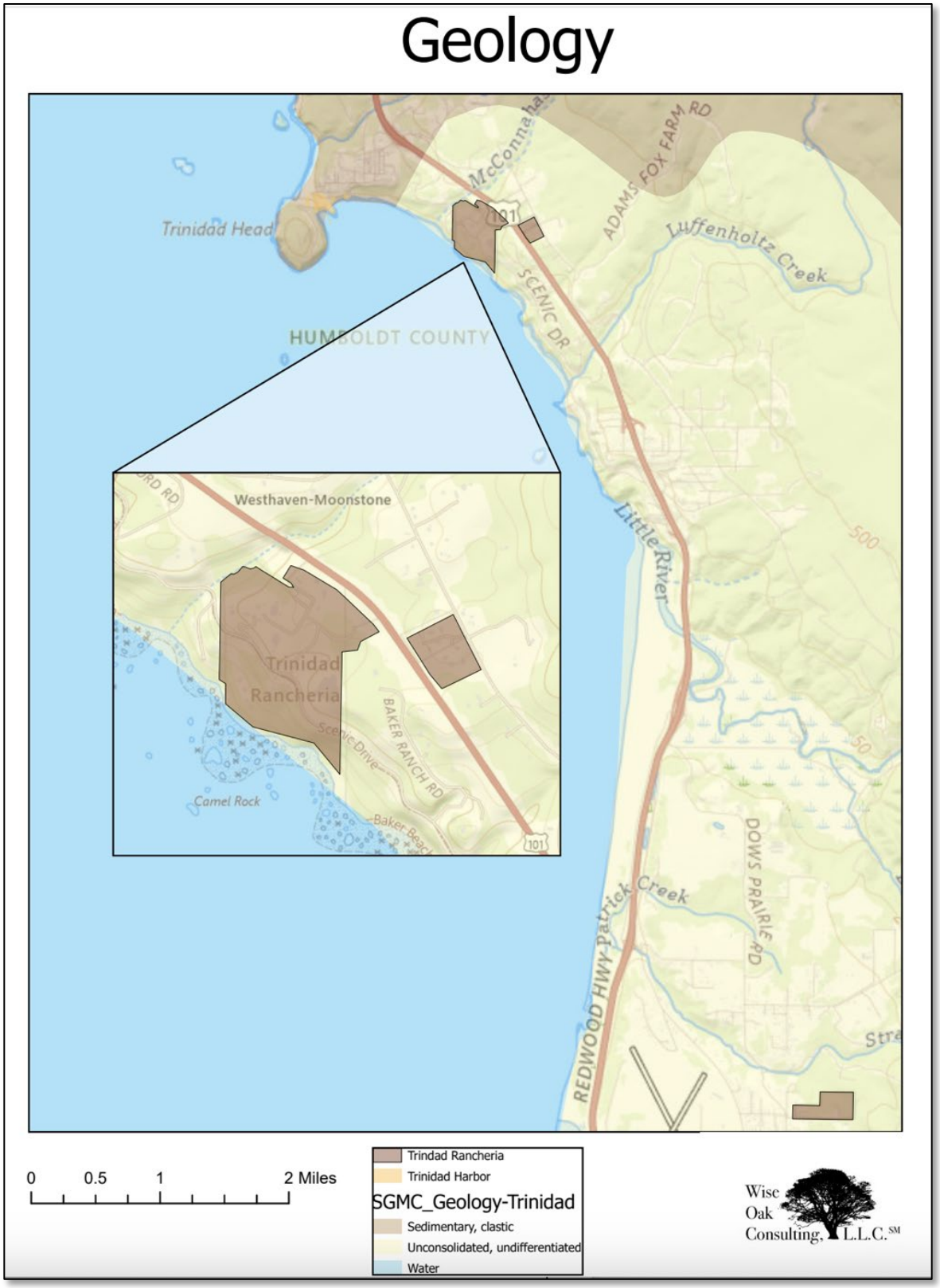


Figure 10. Geology.

4. Soil

The predominate soil type along the coastline is Candymountain inceptisols. Candymountain Inceptisols are deep, well drained soils formed in marine deposits from mixed sources on uplifted marine terraces and hillslopes of 0 to 75 percent. The soil is fine sandy loam. This soil also occurs in wet climates but does dry out during the dry season. Clearly, the combination of the fine sandy loam on steep hillsides makes slides likely (Figure 11). (U.S. Department of Agriculture, 2016)

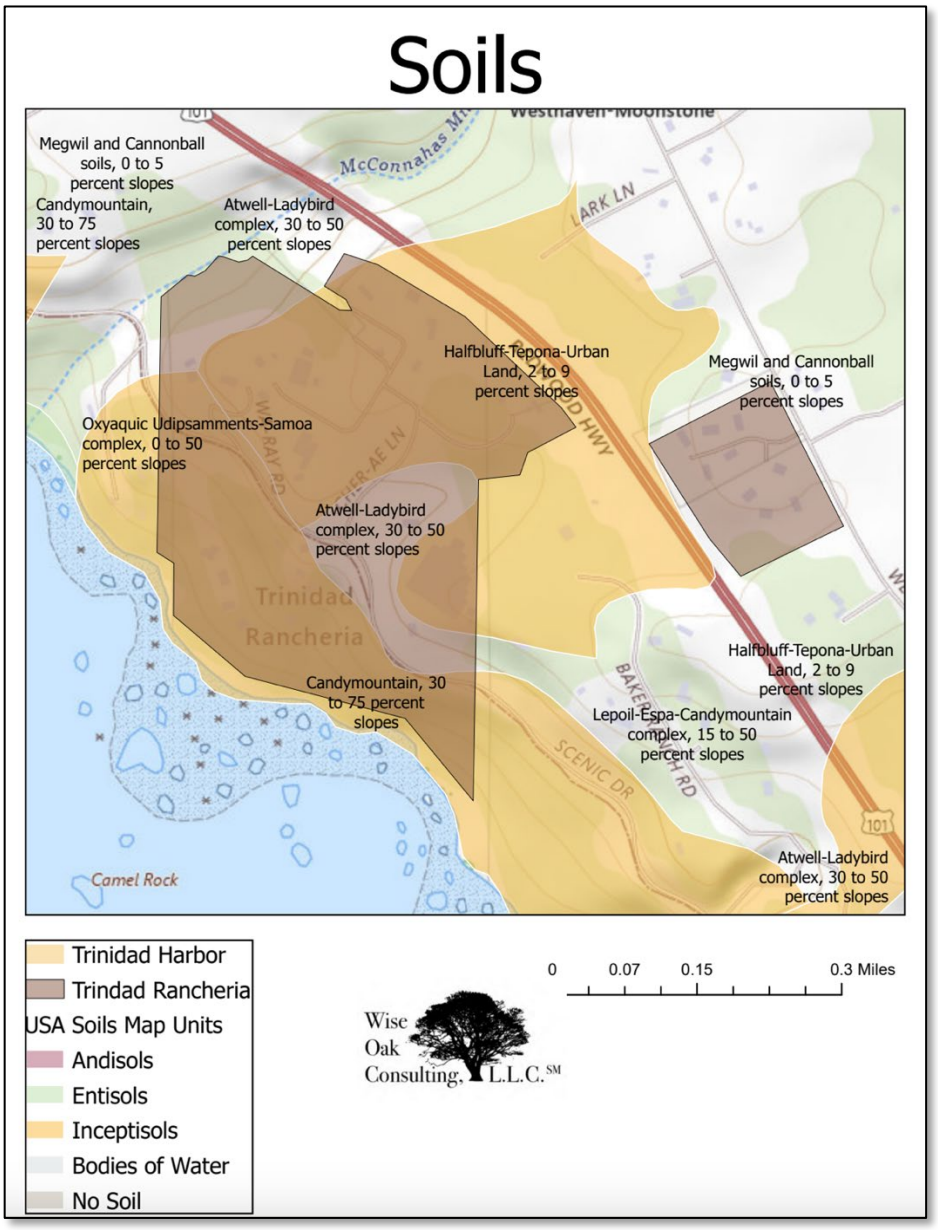


Figure 11. Soils.

5. Climate

Trinidad Rancheria and its coastal neighboring communities have a maritime climate with high humidity prevailing throughout the year. Trinidad Rancheria receives an average of 40.4 inches of rain per year. (National Oceanic and Atmospheric Administration, 2024) Ninety percent (90%) of the precipitation falls during the rainy season which lasts from October through April. The dry season (May through September) typically has regular intrusions of low clouds and fog.

As depicted in Figure 12, temperatures are quite moderate with the record high of 87°F in October 1993, and a record low of 20°F in January 1888. (National Oceanic and Atmopsheric Administration, 2024) The proximity to the Pacific Ocean results in a relatively small temperature range. During a typical year, the average low temperature in December through March is 41°F and the average high in June through October is 63°F. (National Oceanic and Atmopsheric Administration, 2024)

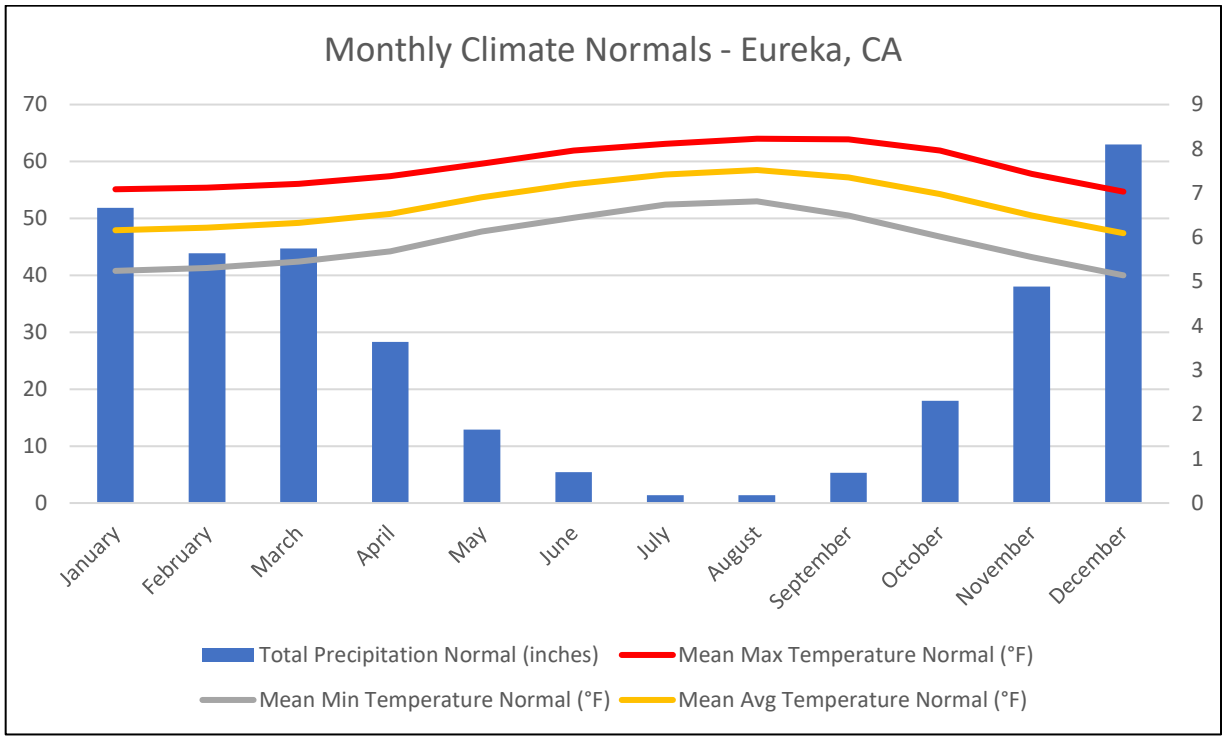


Figure 12. Monthly Climate Normals – Eureka, CA.

During the warm season, typically from June to October, northerly winds prevail over the coastal waters as a semi-permanent ridge dominates over the Eastern Pacific and a semi-permanent Heat

Low develops over interior California. In the cool season, the North Coast periodically sees strong southerly winds as East Pacific storms make landfall.

6. Population/Demographics

While Trinidad Rancheria's total population is 280, an estimated 126 members are living in the three tracts of homes – Main Parcel (43); Westhaven (28); McKinleyville (55). (United States Census Bureau, 2024)

- Senior citizens (65 years and over) comprise 19% of the Tribe's population.
- Approximately 20% of the Tribal population have disabilities and/or access and functional needs.
- Youth under 18 years of age comprise 19% of the Tribe's population.
- The average Trinidad Rancheria resident is 42 years of age.
- Trinidad Rancheria is unique in its household and housing cross-section. One hundred percent (100%) are family households. There is an average of 3.0 people per family.
- An estimated 13% of tribal members over the age of 25 reported have a college degree, (e.g. either an associate degree or higher).

7. Economy

Trinidad Rancheria is emerging as an economically successful Tribe with business enterprises:

- Heights Casino (includes a giftshop, Sunset Restaurant, and Sunrise Deli)
- Seascape Pier
- Seascape Restaurant
- Seascape Vacation Rental
- Trillium Rental

While exact economic values are available, they are either proprietary for enterprises or confidential for the Trinidad Rancheria government itself. The total value of assets to be replaced in the event of disaster is estimated at $65.1 million, which includes the Governmental structure, Tribal homes and the Tribal enterprises. The loss of net revenues per day exceeds $3,000 per day. There are approximately 175-200 staff depending on the season, and the loss in wages is far greater at over $20,000 per day (Table 12).

Table 12. Economic Impact of Trinidad Rancheria Government and Enterprises.

Staff	Daily Payroll	Fixed Assets	Daily Net Revenue
200-250	$30,000+	$65.1M	$3,000+

8. Industry

a) Government as Employer

The governing body of the Tribe (Community Council) consists of all duly enrolled, base roll, and voting members. From the Community Council, a Tribal Council is elected. It is the duty of the Tribal Council to govern all the people, resources, land, and water reserved to the Tribe in accordance with the Trinidad Rancheria Constitution, such laws as adopted by the Tribal Council, such limitations as may lawfully be imposed by the Tribal Council, and such limitations as may be lawfully imposed by the statutes or the Constitution of the United States (Cher-Ae Heights Indian Community of the Trinidad Rancheria, The People, The Land, and The Water, Marine Life Protection Act Initiative Regional Profile, The Trinidad Traditional Fisheries Coalition, April 6, 2010).

The Tribal Council consists of a Chairperson, Vice-Chairperson, Secretary/Treasurer and two (2) additional members to serve as Tribal Council Members. Any Community Council member (eighteen years of age or over) is eligible to serve on the Tribal Council if duly elected. The Tribal Council meets twice a month.

The Tribal administrative office has more than 30 staff. The Trinidad Rancheria departments include the following:

- Tribal Council
- Tribal Administration
    - Chief Executive Officer (CEO)
    - Executive Manager
    - Natural Resources Department
    - Finance and Accounting (Chief Financial Officer)
        - Deputy CFO
        - Payroll
        - Staff Accountant
- Housing
- Human Resources
- Information Technology (IT) Department
- Transportation and Land Use
    - Emergency Services
- Social Services
- Tribal Court

- Tribal Programs
    - Animal Control
    - Cultural Resources
    - Education
    - Library
    - Member Services

b) Services

The Tribal Programs Department encompasses multiple program areas offered to tribal members including, Member Intake, Social Services, Housing, Education, Cultural Resources, Tribal Historic Preservation, Animal Control, Youth Program, and Wellness Program which includes the Community Garden. The Rancheria's Youth Program hosts seasonal programming that provides cultural activities and fitness activities and facilitates community building. Advanced educational programs are available at the College of the Redwoods, located south of Eureka, and at California State Polytechnic University, Humboldt, in Arcata. Due to limited personal internet access, many Tribal members rely upon the library for web access.

c) Tourism and Recreation

All of Trinidad Rancheria's economic enterprises are tourism-oriented, which includes The Heights Casino, Sunset Restaurant, Seascape Restaurant, Seascape House, and Trinidad Harbor operations - boat launching/moorage facilities in Trinidad Harbor that serve the Trinidad recreational and commercial fishing fleet. The casino was established in 1988 and has grown to be one of the major employers in Humboldt County with approximately 140 staff. Trinidad Harbor Operations employs approximately people. The enterprises generate approximately $3,000 per day in net revenue and account for much of the $20,000 per day in Tribal daily payroll.

d) Economic Development Projects

The Tribe has formed the Trinidad Rancheria Economic Development Corporation (TREDC) for the purpose of Economic Development projects. The major thrust of the Rancheria's economic development plans is to continually improve the gaming, dining, and lodging experience at its various tourist-serving facilities to keep them competitive and to enhance the Rancheria's reputation as a leader in the local tourism industry. Furthermore, the 2011 Trinidad Rancheria Comprehensive Community-Based Plan details the long-term goals for growth and improvement of Trinidad Rancheria. This plan is written with consideration for the comprehensive plan. On the Main Parcel, the Tribe intends to build a hotel with a convention center, a RV park, and a

Mini mart/Gas Station. Plans for the expansion of the Trinidad Harbor operations include an expanded gift shop and restaurant and a visitor-oriented incubator space focused on eco-tourism. The incubator space is intended to preserve and grow native species for education, preservation, and repopulation. With its expanded responsibility for Trinidad Harbor, the Tribe seeks to expand its monitoring, testing, and treating activities to protect native species.

e) Development History and Planning

As a community, Trinidad Rancheria strives to create a more sustainable way of life both locally and globally through safeguarding and enhancing tribal resources and by preventing harm to the environment and human health. The Tribe is resolved that their impact on the environment must not jeopardize the prospects of future generations. The Goals of the Trinidad Rancheria Comprehensive Community-Based Plan are in Section IV, "Plan Updates."

f) Tribal Council

In the future, formally established committee(s) or boards could be created with the authority to review proposed projects. Until then, it is likely that the Tribal Council will be the body responsible for reviewing and approving development projects.

9. Critical Facilities & Infrastructure

a) Critical Facilities & Infrastructure:

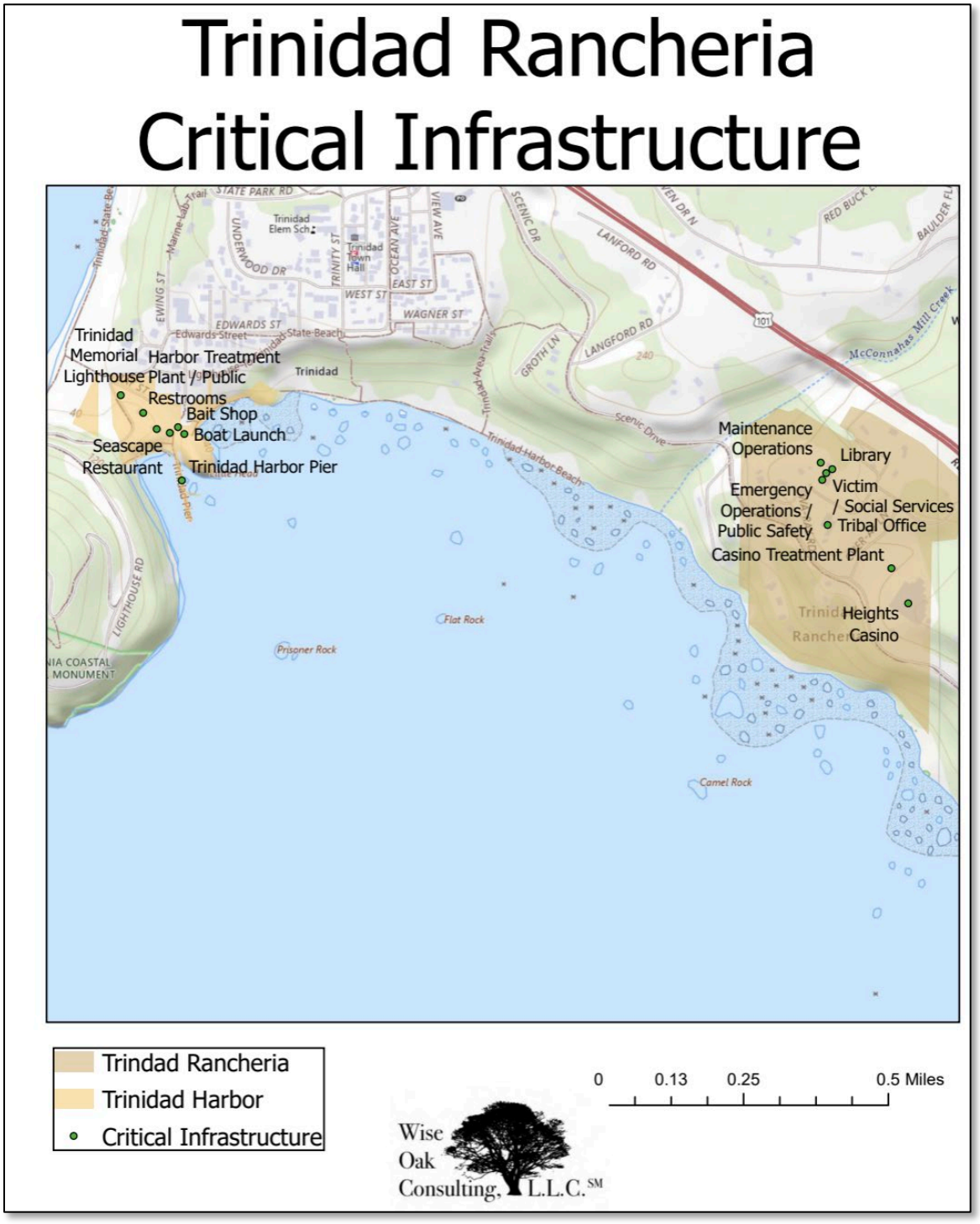


Figure 13. Trinidad Rancheria Critical Infrastructure.

Tribal Operations - Tribal Operations provide the full complement of services to Tribal members as well as oversight of business enterprises. The facilities and personnel are essential to Tribal operations. The library provides internet access to the many Tribal members who do not have services at home.

Emergency Operations / Public Safety – The Emergency Operations Center shares a building with the Department of Social Services, but there is no direct access between them. In addition, non-congregate care apartments are located in the building.

Department of Social Services – The Emergency Operations Center shares a building with the Department of Social Services, but there is no direct access between them. The Department of Social Services also houses the Victim Support Center with physical security measures.

The Heights Casino - The casino is a major employer and funding resource for the Tribe.

Trinidad Harbor - The Trinidad Harbor is a critical facility not only for the Rancheria but community as well. It includes the working pier which accommodates a small commercial crab fleet as well as a boat launch for recreational fishermen.

Schools and Education - Children attend elementary and middle school in communities nearby Trinidad and McKinleyville. Busing is provided for elementary school students; high school students must commute to the McKinleyville High School. There is a library located in the youth center which is located on Tribal property.

Water - Water on the Rancheria is provided by the City of Trinidad, and solid waste is collected by a disposal company. All Rancheria households use on-site sewage disposal systems.

Highways - U.S. Highway-101 runs north-south on the east side of the Rancheria. Scenic Drive provides access to the Rancheria from the Trinidad highway exit. The nearest commercial airport is the Arcata/Eureka Airport located approximately 5 miles away in the town of McKinleyville.

a. Vulnerability Assessment

Vulnerability is best defined as ‘open to attack, harm and/or damage’. The purpose of the Vulnerability Assessment is to answer the question of “What could my community lose due to the impact from this/these hazard(s)?”

For the Plan, the following tasks were performed as a part of the vulnerability assessment:

- Asset Inventory
- Potential Loss Estimations

- Identifying Future Structures
- Development Trends Analysis

The following sections summarize the Team efforts to assemble and analyze the data needed for the vulnerability assessment and to present the results of the vulnerability analysis.

b. Asset Inventory

Table 13 is a summary of critical infrastructure and Table 14 is a summary of Tribal housing. Actual values are available on request from the Tribe

Table 13. Trinidad Rancheria Critical Infrastructure.

Parcel	Facility / Assets / Liabilities
Main Parcel	Tribal Office
	Library
	Maintenance Facility
	Social Services
	Storage Building & Equipment
	Records Building
Trinidad Harbor	Seascape House
	Public Restrooms
	Gift Shop
	Boat Launch Facilities
	Pier
	Seascape Restaurant
	Water Treatment Facility
Other	Fine Arts
	Seascape Payroll
	Rental Home
The Heights Casino	The Heights Casino & Sunset Restaurant
	Water Treatment Facility
	The Heights Casino and Restaurant Payroll

Table 14. Trinidad Rancheria Homes.

Parcel	Homes
Main Parcel	18
Westhaven Parcel	11 (2 trailers)
McKinleyville Parcel	15
Total	44

c. Loss Estimations

Economic loss estimates are provided in each hazard profile. The vulnerability is based on the threat posed by each hazard and the 2024 insured value. Because Trinidad Rancheria is such a small portion of the census tract, neither Hazus®-MH nor the National Risk Index assessments were used.

10. Identifying Future Structures

a) Development Trend Analysis

In the past, the development within the Trinidad Rancheria boundaries was considered on a case-by-case basis by the Tribal Council.

b) Economic Development Projects

Trinidad Rancheria currently has economic development projects that include the following.

- Hotel on the Main Parcel.
- Gas Station on the Main Parcel.
- Interpretive center at Trinidad Harbor.

c) Housing Development Projects

In 2025, the Westhaven Parcel will add two trailers. Within the lifespan of this Pla, the Tribe will add 10-12 homes on the McKinleyville Parcel.

d) Development History and Planning

As a community, Trinidad Rancheria desires to foster a sustainable way of life both locally and globally through safeguarding and enhancing tribal resources and by preventing harm to the environment and human health. The Tribe is resolved that their impact on the environment must not jeopardize the prospects of future generations.

e) Tribal Council

In the future, formally established committee(s) or boards could be created with the authority to review proposed projects. Until then, it is likely that the Tribal Council will be the body responsible for reviewing and approving development projects.

Section II: Hazard Identification and Risk Assessment

B. Identified Hazards of Concern

1. Hazard Selection

Element	Requirements
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the Tribal planning area? 44 CFR § 201.7(c)(2)(i) ***Intent:*** *To understand the natural hazards affecting the Tribal planning area in order to identify which hazard risks are most significant and which locations are most adversely affected.*	a. The plan shall include a description of the Tribal planning area (See footnote 6 on page 7). b. The plan shall include a description of the natural hazards that can affect the Tribal planning area. *(Note: There is no requirement to include manmade hazards in the mitigation plan. FEMA will not require removal of this information, but if these hazards are included, they will not be reviewed to meet the requirements).* c. The plan shall provide the rationale for the omission of any natural hazards that are commonly recognized to affect the Tribal planning area. d. The description shall include information on the location and the extent of each identified hazard. ***Location*** *means the geographic areas in the Tribal planning area that are affected by the hazard. For many hazards, maps are the best way to illustrate location. However, location may be described in other formats. For example, if a geographically-specific location cannot be identified for a hazard, such as tornadoes, the plan may state that the entire Tribal planning area is equally at risk to that hazard.* ***Extent*** *means the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence based on a scientific scale (e.g., Enhanced Fujita Scale, Saffir-Simpson Hurricane Scale, Richter Scale, flood depth grids) and/or other hazard factors, such as the duration and/or speed of onset. Extent is not the same as impacts, which are described in sub-element B3.*

Element	Requirements
B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for the Tribal planning area? 44 CFR § 201.7(c)(2)(i) ***Intent:*** *To understand potential impacts to the Tribal planning area based on information on the hazard events that*	a. The plan shall include the history of previous events for each of the identified hazards. b. The plan shall include the probability of future events for each identified hazard. Probability must include considerations of future conditions, including the effects of long-term changes in weather patterns on identified hazards. *Probability may be defined in terms of general descriptors (for example, unlikely, likely, highly*

Element	Requirements
have occurred in the past and the likelihood that those will occur in the future.	*likely), historical frequencies, statistical probabilities (for example a 1-percent chance of occurring within any given year), and/or hazard probability maps.* *If general descriptors are used, then they shall be defined in the plan. For example, "highly likely" could be defined as equal to or near 100 percent chance of occurring next year or happens every year.* *Probability of future events and considerations of changing future conditions may be described using qualitative and/or quantitative information:* ● *Qualitative information (e.g., transcribed oral history) about changing weather patterns and potential effects on identified hazards.* ● *Quantitative information that describes predicted changes in temperature and precipitation and potential effects on identified hazards.*

Section II: Hazard Identification and Risk Assessment

Element	Requirements
B3. Does the plan include a description of [each] identified hazard's impact, as well as an overall summary of the vulnerability of the Tribal planning area? 44 CFR § 201.7(c)(2)(ii) ***Intent:*** *For the Tribal government to consider their Tribal planning area as a whole and analyze the potential impacts of future hazard events and the vulnerabilities that could be reduced through hazard mitigation actions.*	a. The plan shall describe the potential impacts of each of the identified hazards on the Tribal planning area. ***Impact*** *means the consequence or effect of the hazard on the Tribal government and its assets. Assets are determined by the Tribal government and may include, for example, people, structures, facilities, systems, and populations that are susceptible to damage and loss from hazard events. Assets may also include cultural sites, sacred sites, capabilities and/or activities that have value to the Tribal government. Impacts could be described by referencing historical disaster impacts and/or an estimate of potential future losses (such as percent damage of total exposure).* b. The plan shall provide an overall summary of the vulnerability of the Tribal planning area to the identified hazards. An overall summary of vulnerability identifies structures, systems, populations, and other assets as defined by the Tribal government. *Vulnerable assets and potential losses are more than a list of the total exposure of population, structures, and critical facilities in the Tribal planning area. An example of an overall summary is a list of key issues or problem statements that clearly describes the Tribal government's greatest vulnerabilities that will be addressed in the mitigation strategy.*

Section II: Hazard Identification and Risk Assessment

a) Hazard Selection Process

Step 1: Identify and Screen Hazards

To take a more wholistic approach to its risk management, Trinidad Rancheria is including the three categories of hazards and threats defined by the National Preparedness Goal:

- *Natural hazards, which result from acts of nature, such as hurricanes, earthquakes, tornadoes, animal disease outbreak, pandemics, or epidemics.*
- *Technological hazards, which result from accidents or the failures of systems and structures, such as hazardous materials spills or dam failures.*
- *Human-caused incidents, which result from the intentional actions of an adversary, such as a threatened or actual chemical attack, biological attack, active shooter, or cyber incident.*

While technological hazards and human-caused threats are optional and not evaluated by FEMA as a part of Tribal Hazard Mitigation Planning reviews, Trinidad Rancheria is including them in its Hazard Mitigation Plan to better integrate the HMP with all elements of the National Preparedness System such as the Tribe Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR) as shown in Figure 4.

Step 2: Profile Hazards

Hazards are profiled according to the following format in each respective section:

1. General hazard description
2. Location
3. Extent
4. Previous Occurrences on Trinidad Rancheria
5. Probability of Future Events on Trinidad Rancheria
6. Vulnerability of Trinidad Rancheria
7. Impact on Trinidad Rancheria
8. Impact of Climate Change

Step 3: Identify Assets

Assets are defined as population, buildings, critical facilities and infrastructures, economic resources, and cultural and environmental resources that may be affected by hazard events.

Step 4: Assess Vulnerabilities

A vulnerability analysis predicts the extent of exposure that may result from a hazard event of a given intensity in a given area. The assessment provides quantitative data that may be used to identify and prioritize potential mitigation measures by allowing the Rancheria to focus attention on areas with the greatest risk of damage.

Step 5: Analyze Potential Losses

The final stage of the risk assessment process provides a general overview of vulnerable populations, structures, critical facilities, and resources in hazardous areas. This information provides groundwork for decisions about where the mitigation strategies would be most effective.

b) Social Vulnerability

To maximize standardization across the nation, Douglas County is incorporating FEMA's National Risk Index, the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) and associated Social Vulnerability Themes. Figures 14-18 show the overall census tract-level Social Vulnerability Index and the four Social Vulnerability Themes – Socioeconomic, Household Composition/Disability, Minority/Language, and Housing/Transportation. In general, darker colors represent higher (worse) vulnerability. The County can use the SVI maps to help determine how it might prioritize mitigation and preparedness projects. "Social Vulnerability refers to the resilience of communities (the ability to survive and thrive) when confronted by external stresses on human health, stresses such as natural or human-caused disasters or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss." (Centers for Disease Control and Prevention, 2022) The overall Social Vulnerability Index (SVI) is based on four (4) themes:

- "**Socioeconomic** status (below 150% poverty, unemployed, housing cost burden, no high school diploma, no health insurance)
- **Household characteristics** (aged 65 or older, aged 17 or younger, civilian with a disability, single-parent households, English language proficiency)
- **Racial and ethnic minority status** (Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino)

- **Housing type & transportation** (multi-unit structures, mobile homes, crowding, no vehicle, group quarters)" (Centers for Disease Control and Prevention, 2022)

*Note. This Plan uses FEMA's National Risk Index to conduct hazard profile assessments. The National Risk Index incorporates social vulnerability in each hazard analysis. The overall National Risk Index Score is a function of:

- Expected Annual Loss
- Social Vulnerability
- Community Resilience

Overall Social Vulnerability Index

As can be seen in Figures 14-18, Trinidad Rancheria is a small segment of U.S. Census tracts that make up Humboldt County. As such, the Social Vulnerability Index assessments provide a context for the region(s) that encompass Trinidad Rancheria. It is important to note that Trinidad Rancheria itself is a small and impoverished community and represents the most socially vulnerable segment of many the maps in Figures (14-18).

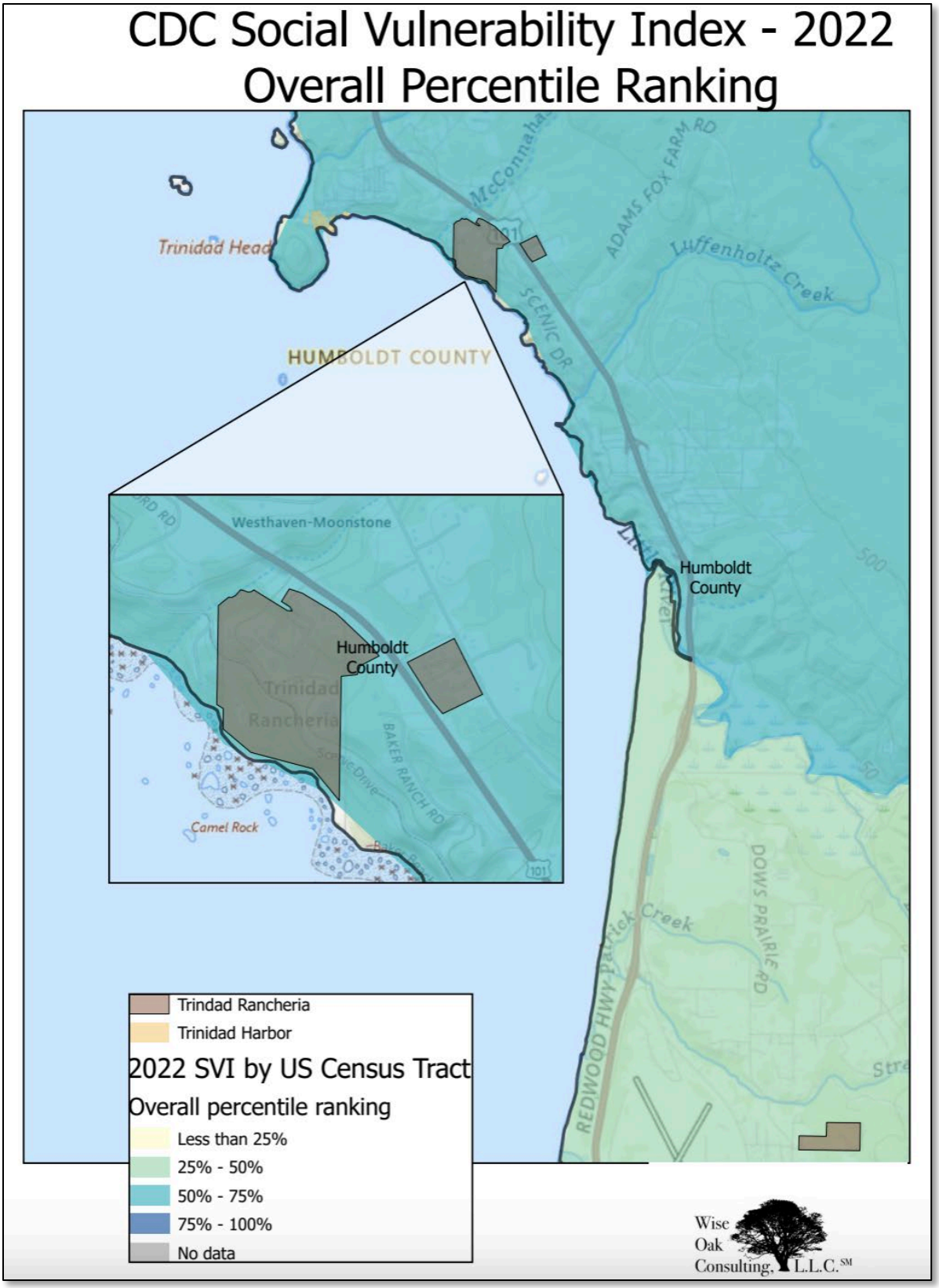


Figure 14. CDC Social Vulnerability Index (2022): Overall SVI.

Social Vulnerability Index – Socioeconomic Theme

Figure 15 depicts the SVI Socioeconomic theme. As a small and impoverished community, Trinidad Rancheria is among the most vulnerable communities. Given the affluent nature of residents in the Town of Trinidad, the overall census tract assessment likely does not represent the Rancheria as a whole. The factors that determine the SVI Socioeconomic theme reflects the following population characteristics:

- Below 150% poverty
- Unemployed
- Housing cost burden
- No high school diploma
- No health insurance

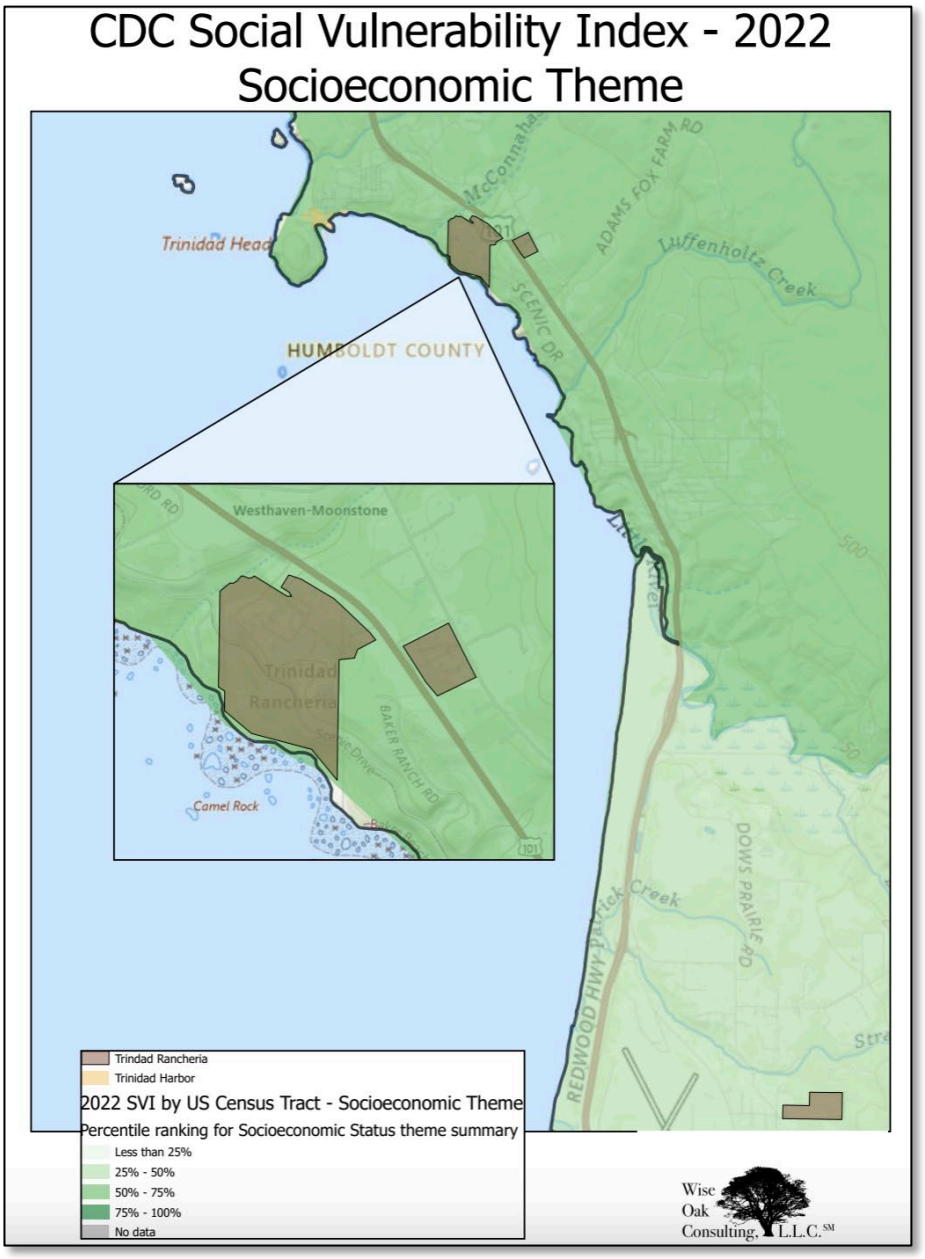


Figure 15. CDC Social Vulnerability Index (2022): Socioeconomic.

Social Vulnerability Index – Household Composition / Disability Theme

Figure 16 depicts the SVI Household Composition/Disability theme. The factors that determine the SVI Socioeconomic theme reflects the following population characteristics:

- Aged 65 or older
- Aged 17 or younger
- Civilian with a disability
- Single-parent households
- English language proficiency

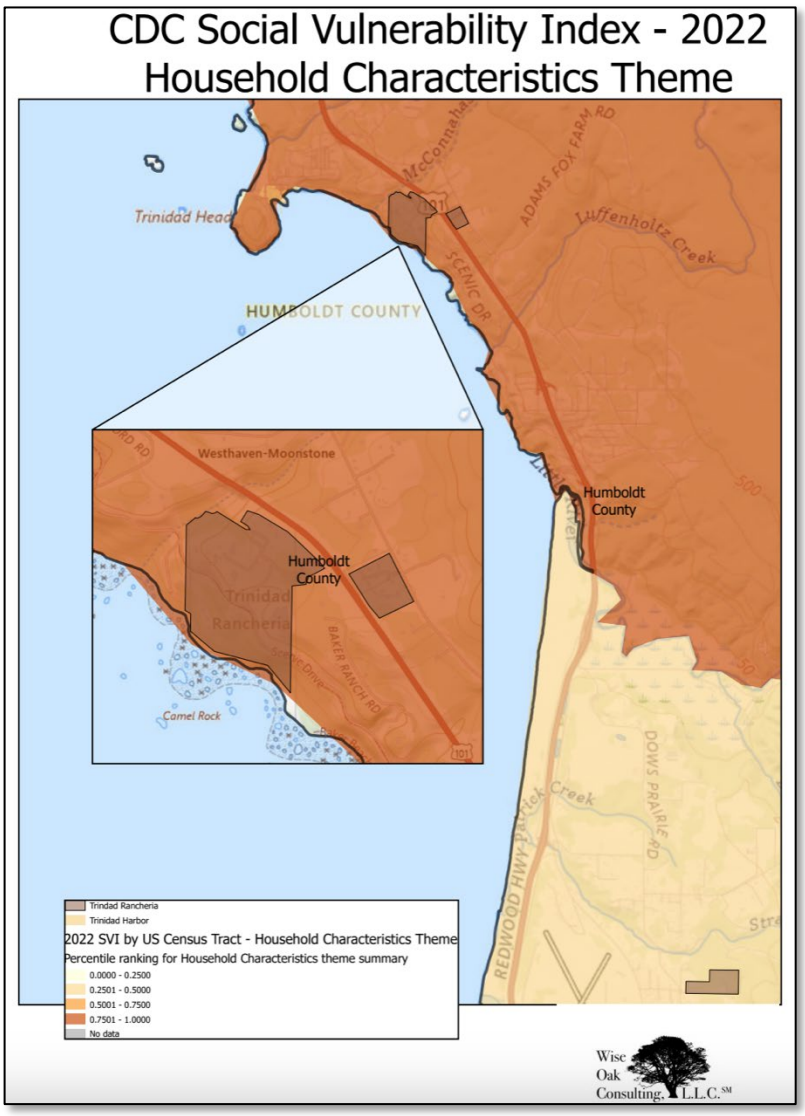


Figure 16. CDC Social Vulnerability Index (2022): Household Composition / Disability Theme.

Social Vulnerability Index – Racial / Ethnic Minority Theme

Figure 17 depicts the SVI Household Minority/Language theme. Again, the low level of vulnerability based on the ethnic makeup of households likely does not represent the Tribe, which would have 100% of households with American Indians. The factors that determine the SVI Household Minority/Language theme reflects the various minorities in the U.S. Census:

- Hispanic or Latino (of any race)
- Black and African American, Not Hispanic or Latino
- American Indian and Alaska Native, Not Hispanic or Latino
- Asian, Not Hispanic or Latino
- Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino
- Two or More Races, Not Hispanic or Latino
- Other Races, Not Hispanic or Latino

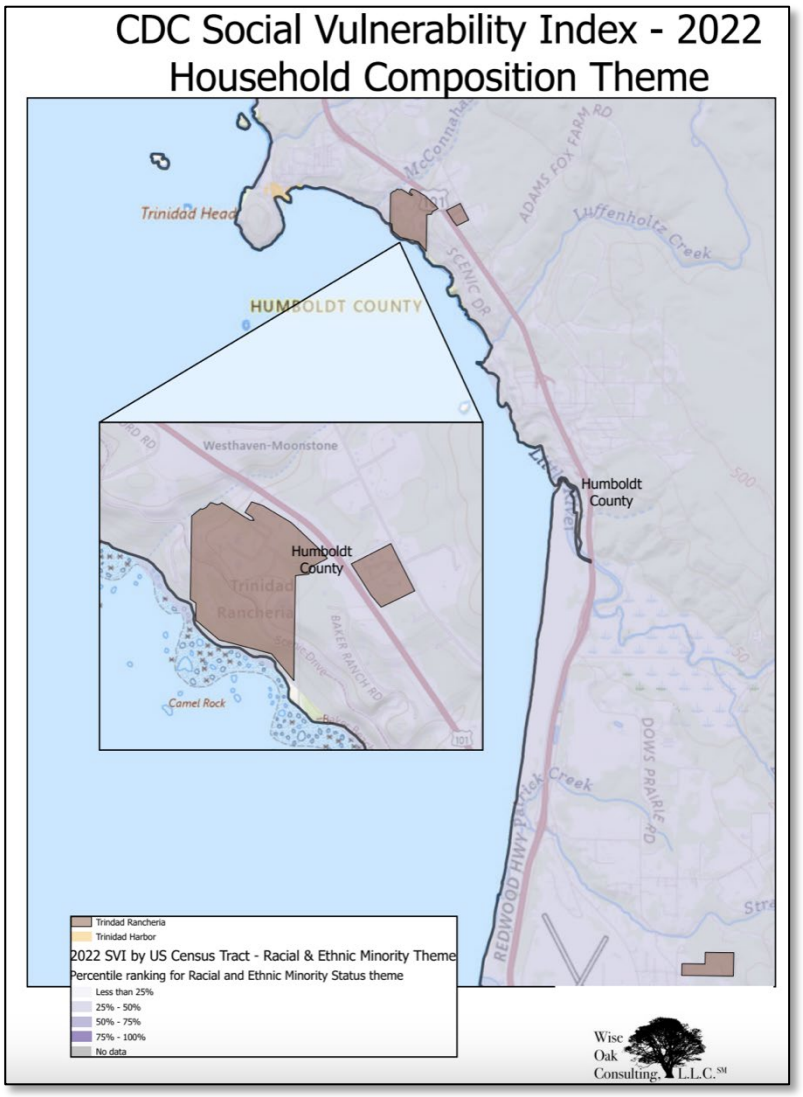


Figure 17. CDC Social Vulnerability Index (2022): Household Minority / Language Theme.

Social Vulnerability Index – Housing / Transportation Theme

Figure 18 is the SVI Housing/Transportation Theme and is the one which is most representative of the Rancheria. The factors that determine the SVI Housing/Transportation theme reflects the following population characteristics:

- Multi-unit structures
- Mobile homes
- Crowding
- No vehicle
- Group quarters

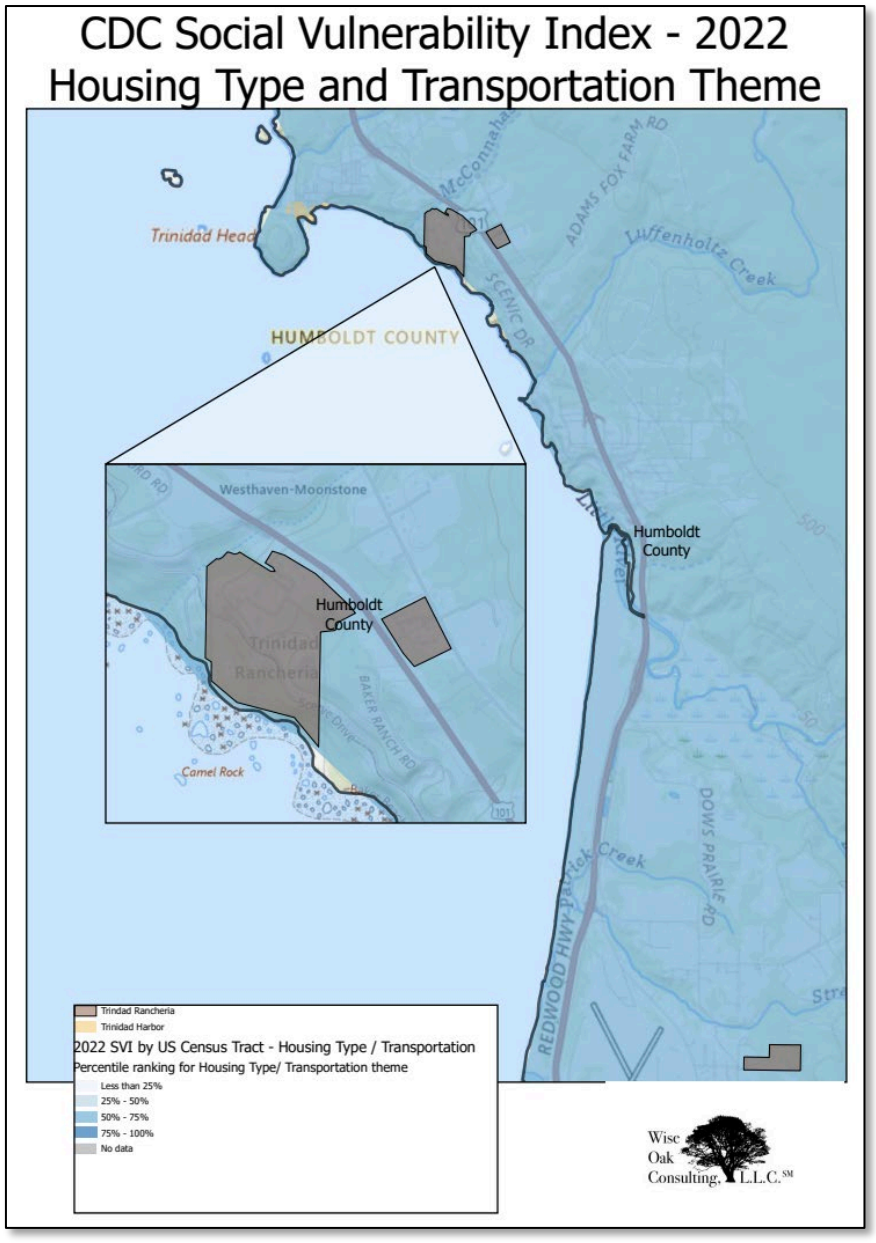


Figure 18. CDC Social Vulnerability Index (2022): Housing / Transportation Theme.

Although Trinidad Rancheria likely varied from the surrounding census tracts, it is instructive to use them in analysis to see the context of the greater community that the Rancheria lies in. With the exception of racial and language diversity, the surrounding census tracts have 50% - 75% of the population vulnerable across the various SVI themes. Given that Trinidad Rancheria would be even more socially vulnerable than the census tracts indicate how much assistance the Rancheria needs.

Again, the risk equation behind the National Risk Index includes social vulnerability and community resilience factors. In addition, the expected annual loss (EAL) also has vulnerability built in (NRI Exposure) in developing the consequences of each hazard. Therefore, every hazard profile that includes NRI information incorporates social vulnerability.

c) Presidential Disaster Declarations

Humboldt County has received 27 Presidential Disaster Declarations. As depicted in Figure 19, floods and severe storms are overwhelming the most common natural disasters.

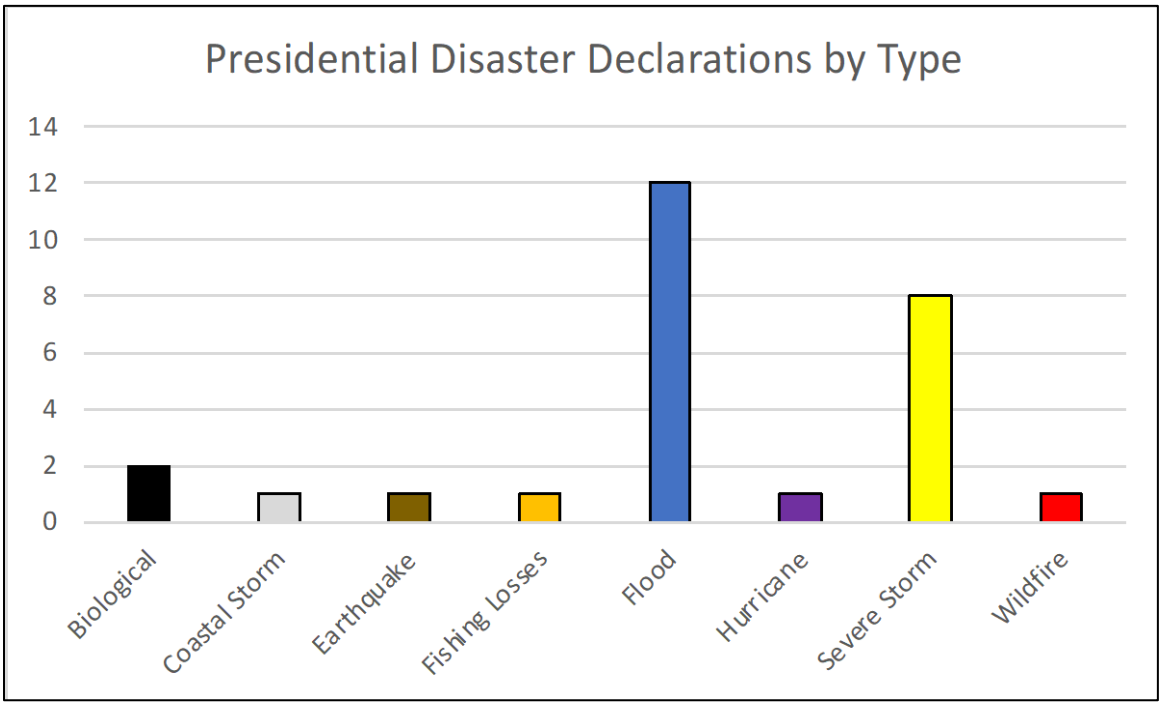


Figure 19. Humboldt County Presidential Disaster Declarations by Type.

Figure 20 clearly highlights that the storms of the winter and early spring seasons represent the greatest risk to the Rancheria.

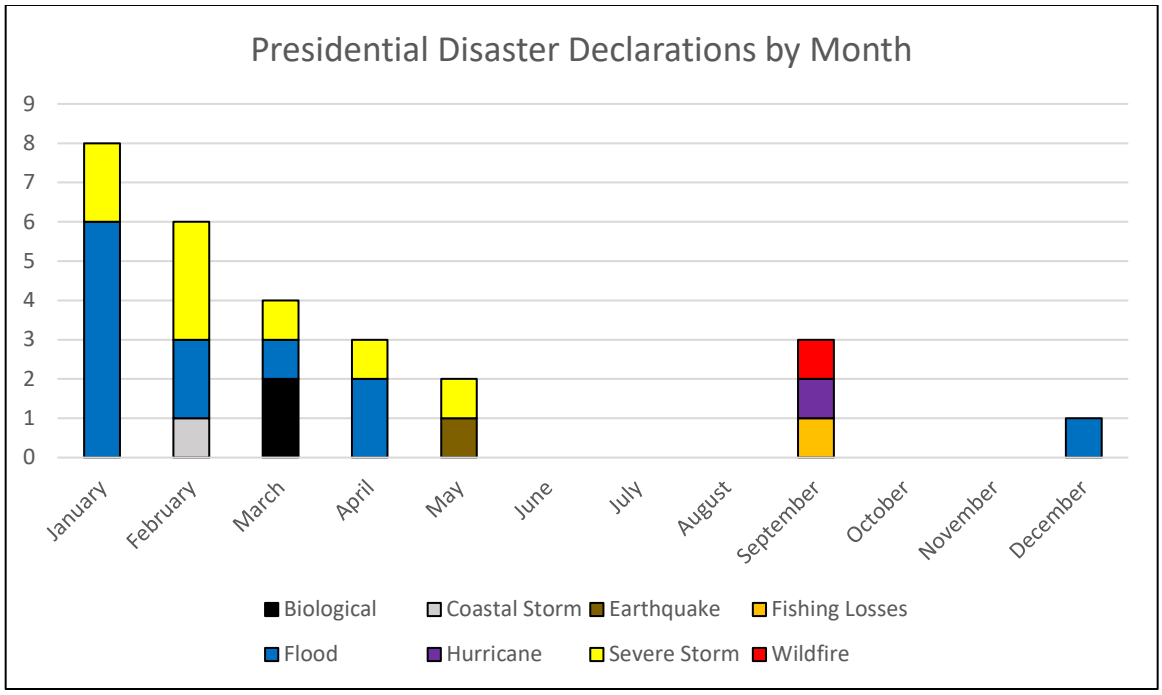


Figure 20. Humboldt County Presidential Disaster Declarations by Month.

Table 15 lists the FEMA Federal disaster declarations, including financial assistance, for Humboldt County. While the total FEMA assistance includes all designated areas (not just Humboldt County), the amount of financial assistance indicates the magnitude of the impact of the disasters.

Table 15. Humboldt County Presidential Disaster Declarations & FEMA Financial Assistance.

Disaster Type	Disaster Declaration*	Dates	Total FEMA Assistance ($)**
Flood	DR-183-CA	December 24, 1964	IA – unknown PA – unknown
Flood	DR-212-CA	January 22, 1966	IA – unknown PA – unknown
Flood	DR-253-CA	January 26, 1969	IA – unknown PA – unknown
Flood	DR-329-CA	April 5, 1972	IA – unknown PA – unknown

Table 15. Humboldt County Presidential Disaster Declarations & FEMA Financial Assistance.			
Disaster Type	**Disaster Declaration***	**Dates**	**Total FEMA Assistance ($)****
Flood	DR-412-CA	January 25, 1974	IA – unknown PA – unknown
Flood	DR-651-CA	December 19, 1981 - January 8, 1983	IA – unknown PA – unknown
Coastal Storm	DR-677-CA	January 21, 1983 – March 30, 1983	IA – unknown PA – unknown
Flood	DR-758-CA	February 12, 1986 - March 10, 1986	IA – unknown PA – unknown
Earthquake	DR-943-CA	April 25, 1992 – May 4, 1992	IA – unknown PA – unknown
Flood	DR-979-CA	January 5, 1993 - March 20, 1993	IA – unknown PA – unknown
Fishing Losses	DR-1038-CA	May 1, 1994 – October 31, 1994	IA – N/A PA – unknown
Severe Storm	DR-1044-CA	January 3, 1995 – January 10, 1995	IA – unknown PA – unknown
Severe Storm	DR-1046-CA	February 13, 1995 – April 19, 1995	IA – unknown PA – unknown
Severe Storm	DR-1155-CA	December 28, 1996 – January 4, 1997	IA – unknown PA – unknown
Severe Storm	DR-1203-CA	February 2, 1988 – April 30, 1998	IA – unknown PA – unknown
Fire	EM-3140-CA	August 24, 1999 – November 29, 1999	IA – N/A PA • PA (Categories A-B): $50,716,251.84 • PA (Categories C-G): $12,517.79
Hurricane	EM-3248-CA	August 29, 2005 – October 1, 2005	IA – N/A PA • PA (Category B): $881,982.66
Severe Storm	DR-1628-CA	December 17, 2005 -January 3, 2006	IA – N/A (Humboldt County) PA • PA (Categories A-B): $29,679,229.24

Table 15. Humboldt County Presidential Disaster Declarations & FEMA Financial Assistance.			
Disaster Type	**Disaster Declaration***	**Dates**	**Total FEMA Assistance ($)****
			• PA (Categories C-G): $117,640,624.50 HMGP: N/A
Severe Storm	DR-4301-CA		IA – N/A PA • PA (Categories A-B): $23,067,920.97 • PA (Categories C-G): $105,573,045.80 HMGP: $22,708,199.94
Flood	DR-4308-CA	February 1, 2017 - February 23, 2017	IA – N/A PA • PA (Categories A-B): $151,794,535.62 • PA (Categories C-G): $272,635,923.77 HMGP: $15,012,050.80
Severe Storm	DR-4434-CA	February 24, 2019 – March 1, 2019	IA – N/A PA • PA (Categories A-B): $7,828,033.81 • PA (Categories C-G): $18,570,020.27 HMGP: $4,947,792.08
Biological	EM-3428-CA	January 20, 2020 – May 11, 2023	IA – N/A PA • PA (Category B): $8,313,848.34 HMGP: N/A
Biological	DR-4482-CA	January 20, 2020 – May 11, 2023	IA • Other Needs Assistance (ONA): $244,647,382.22 PA • PA (Category B): $9,700,067,817.72 • PA (Categories C-G): N/A HMGP: $74,335,415.48
Flood	EM-3591-CA	January 8, 2023 - January 31, 2023	IA – N/A PA • PA (Category A): N/A • PA (Category B): unknown • PA (Categories C-G): N/A

Table 15. Humboldt County Presidential Disaster Declarations & FEMA Financial Assistance.			
Disaster Type	**Disaster Declaration***	**Dates**	**Total FEMA Assistance ($)****
			HMGP: N/A
Flood	DR-4683-CA	Dec 27, 2022 - Jan 31, 2023	IA – N/A PA • PA (Categories A-B): $50,624,153.98 • PA (Categories C-G): $34,630,876.55 HMGP: $16,966,039.17
Flood	EM-3592-CA	March 9, 2023 – July 10, 2023	IA – N/A PA • PA (Category A): N/A • PA (Category B): unknown • PA (Categories C-G): N/A HMGP: N/A
Severe Storm	DR-4699-CA	February 21, 2023 – July 10, 2023	IA – N/A (Humboldt) PA • PA (Categories A-B): $18,091,653.37 • PA (Categories C-G): $14,124,227.92 HMGP: $4,121,352.89

*Types of disaster declarations

- EM (Emergency Declaration): "Emergency Declarations, an incident is any instance that the President determines warrants supplemental emergency assistance to save lives and protect property and public health and safety, or to lessen or avert the threat of a catastrophe." (Federal Emergency Management Agency 2020)
- DR (Major Disaster Declaration): "For Major Disaster Declarations, an incident is any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion. Major Disaster Declarations may include a combination of incident types, such as storms and landslides." (Federal Emergency Management Agency 2020)

** Public Assistance - Dollars Obligated: Funds made available to the State/Tribe via electronic transfer following FEMA's final review and approval of Public Assistance projects.

Section II: Hazard Identification and Risk Assessment

This plan focuses on the impact of hazards specifically as they relate to Trinidad Rancheria members, its property, and its assets. The analysis for each hazard follows the following format:

1. General hazard description
2. Location
3. Extent
4. Previous Occurrences on Trinidad Rancheria
5. Probability of Future Events on Trinidad Rancheria
6. Vulnerability of Trinidad Rancheria
7. Impact on Trinidad Rancheria
8. Impact of Climate Change

2. Risk Assessment Factors

Per FEMA's Tribal Mitigation Planning Handbook, the analysis factors that are used to compare the hazards and threats are location, extent, previous occurrences, and probability of occurrence. (Federal Emergency Management Agency 2019) In order to quantify the whole community's assessment for the threats and hazards of concern, the planning team used location, extent, probability of occurrence, and general concern for each threat and hazard as described in this section.

a) Location

- Extensive: 50% or more of tribal land/assets affected
- Moderate: 25%-50% of tribal land/assets affected
- Limited: 25% or less of tribal land/assets affected

b) Extent

The magnitude of the hazard (Richter Scale, tsunami height, etc.)

- Catastrophic:
    - Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure).
    - Injuries or illnesses result in permanent disability and multiple deaths.
    - Overwhelming damage requires Federal assistance and requires months to years to recover.
- Critical:
    - Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure).
    - Injuries or illnesses result in permanent disability and at least one death.

  - Shut down of critical facilities for more than 1 week and less than 1 month.
- Limited:
  - Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure).
  - Injuries or illnesses do not result in permanent disability and there are no deaths.
  - Moderate quality of life lost.
  - Shut down of critical facilities for more than 1 day and less than 1 week.
- Negligible:
  - Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths.
  - Negligible quality of life lost. Shut down of critical facilities for less than 24 hours.

c) Probability of Occurrence

- Highly Likely: Frequent events with a well-documented history of occurrence. Annual probability that is greater than 10%.
- Likely: Between Occasional occurrences with at least two or more documented historic events. Annual probability that is between 10% and 1%.
- Possibly: Rare occurrences with at least one documented or anecdotal historic event. Annual probability that is between 1% and .1%.
- Unlikely: Extremely rare with no documented history of occurrences or events. Annual probability of less than .1%.

d) Level of Concern

- Very High: Keeps people up at night.
- High: Of great concern.
- Moderate: General concern.
- Low: On people's radar but they are not particularly worried.
- Very Low: Not worth addressing.

Section II: Hazard Identification and Risk Assessment

The results from the survey and workshop participants using each of the definitions were given numerical factors based on the weight values in Table 16.

Table 16: Threat and Hazard Scoring Methodology.

Location		Extent		Probability		Concern	
Description	Weight	Description	Weight	Description	Weight	Description	Weight
Extensive	3	Catastrophic	4	Highly Likely	4	Very High	5
Moderate	2	Critical	3	Likely	3	High	4
Limited	1	Limited	2	Possibly	2	Moderate	3
		Negligible	1	Unlikely	1	Low	2
						Very Low	1

The results for each assessment category were summed to arrive at a total score for each threat/hazard. The hazard identification and risk assessment resulted in the prioritized natural hazards of most concern shown in Table 17, Technological hazards of concern in Table 18, and human-caused threats of concern in Table 19.

Table 17. Natural Hazards of Greatest Concern.

Threat/Hazard	Location	Extent	Probability	Concern	Sum	Rank
Landslide	42	53	56	63	214	1
Coastline Erosion	42	47	57	62	208	2
Earthquake	43	51	55	57	206	3
Severe Winter Storms	41	49	54	61	205	4
Tsunami	33	43	42	49	167	5
Sea Level Rise	32	40	43	46	161	6
Wildfires	32	38	38	45	153	7
Epidemic	37	38	38	35	148	8
Marine Animal Disease	32	36	38	42	148	9

Table 17. Natural Hazards of Greatest Concern.						
Threat/Hazard	**Location**	**Extent**	**Probability**	**Concern**	**Sum**	**Rank**
Drought	30	32	41	40	143	10
Flood	27	34	39	40	140	11
Smoke	30	29	40	39	138	12
Land Animal Disease	19	23	29	27	98	13

Table 18: Trinidad Rancheria's Technological Hazards of Greatest Concern.						
Hazard	**Location**	**Extent**	**Probability**	**Concern**	**Sum**	**Rank**
Power Failure	39	48	56	57	200	1
HAZMAT Release - Marine	35	44	44	54	177	2
Structure Fire	33	42	34	47	156	3
Transportation Accident	25	37	43	47	152	4
HAZMAT Release - Land	27	40	35	45	147	5

Table 19: Trinidad Rancheria's Human-Caused Threats of Greatest Concern.						
Threat/Hazard	Location	Extent	Probability	Concern	Sum	Rank
Armed Assault	27	46	38	62	173	1
Cyberattack (data)	35	42	36	58	171	2
Cyberattack (Infrastructure)	34	45	34	58	171	3
Sabotage	29	41	30	49	149	4
Biological Attack	20	41	41	39	141	5

Section II: Hazard Identification and Risk Assessment

C. Natural Hazard Analysis

Element	Requirements
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the Tribal planning area? 44 CFR § 201.7(c)(2)(i) ***Intent:*** *To understand the natural hazards affecting the Tribal planning area in order to identify which hazard risks are most significant and which locations are most adversely affected.*	e. The plan shall include a description of the Tribal planning area (See footnote 6 on page 7). f. The plan shall include a description of the natural hazards that can affect the Tribal planning area. *(Note: There is no requirement to include manmade hazards in the mitigation plan. FEMA will not require removal of this information, but if these hazards are included, they will not be reviewed to meet the requirements).* g. The plan shall provide the rationale for the omission of any natural hazards that are commonly recognized to affect the Tribal planning area. h. The description shall include information on the location and the extent of each identified hazard. ***Location*** *means the geographic areas in the Tribal planning area that are affected by the hazard. For many hazards, maps are the best way to illustrate location. However, location may be described in other formats. For example, if a geographically-specific location cannot be identified for a hazard, such as tornadoes, the plan may state that the entire tribal planning area is equally at risk to that hazard.* ***Extent*** *means the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence based on a scientific scale (e.g., Enhanced Fujita Scale, Saffir-Simpson Hurricane Scale, Richter Scale, flood depth grids) and/or other hazard factors, such as the duration and/or speed of onset. Extent is not the same as impacts, which are described in sub-element B3.*

Element	Requirements
B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for the Tribal planning area? 44 CFR § 201.7(c)(2)(i) ***Intent:*** *To understand potential impacts to the Tribal planning area based on information on the hazard events that have occurred in the past and the likelihood of those will occur in the future.*	c. The plan shall include the history of previous events for each of the identified hazards. d. The plan shall include the probability of future events for each identified hazard. Probability must include considerations of future conditions, including the effects of long-term changes in weather patterns on identified hazards. *Probability may be defined in terms of general descriptors (for example, unlikely, likely, highly likely), historical frequencies, statistical probabilities (for example a 1-percent chance of occurring within any given year), and/or hazard probability maps.* *If general descriptors are used, then they shall be defined in the plan. For example, "highly likely" could be defined as equal to or near 100 percent chance of occurring next year or happens every year.* *Probability of future events and considerations of changing future conditions may be described using qualitative and/or quantitative information:* ● *Qualitative information (e.g., transcribed oral history) about changing weather patterns and potential effects on identified hazards.* ● *Quantitative information that describes predicted changes in temperature and precipitation and potential effects on identified hazards.*

Element	Requirements
B3. Does the plan include a description of [each] identified hazard's impact, as well as an overall summary of the vulnerability of the Tribal planning area? 44 CFR § 201.7(c)(2)(ii) ***Intent:*** *For the Tribal government to consider their Tribal planning area as a whole and analyze the potential impacts of future hazard events and the vulnerabilities that could be reduced through hazard mitigation actions.*	c. The plan shall describe the potential impacts of each of the identified hazards on the Tribal planning area. ***Impact*** *means the consequence or effect of the hazard on the Tribal government and its assets. Assets are determined by the Tribal government and may include, for example, people, structures, facilities, systems, and populations that are susceptible to damage and loss from hazard events. Assets may also include cultural sites, sacred sites, capabilities and/or activities that have value to the Tribal government. Impacts could be described by referencing historical disaster impacts and/or an estimate of potential future losses (such as percent damage of total exposure).* d. The plan shall provide an overall summary of the vulnerability of the Tribal planning area to the identified hazards. An overall summary of vulnerability identifies structures, systems, populations, and other assets as defined by the Tribal government. *Vulnerable assets and potential losses are more than a list of the total exposure of population, structures, and critical facilities in the Tribal planning area. An example of an overall summary is a list of key issues or problem statements that clearly describes the Tribal government's greatest vulnerabilities and that will be addressed in the mitigation strategy.*

Section II: Hazard Identification and Risk Assessment

1. Climate Change

"Throughout the United States, climate-related disasters are causing Indigenous communities to consider or actively pursue relocation as an adaptation strategy. Challenges to Indigenous actions to address disaster management and recovery, displacement, and relocation in the face of climate change include economic, social, political, and legal considerations that severely constrain their abilities to respond to rapid ecological shifts and complicate action toward safe and self-determined futures for these communities." (U.S. Global Change Research Program (USGCP), 2018)

1. General hazard description:

According to the United Nations Climate Action effort, "Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas." (United Nations, n.d.)

As a coastal community, the Trinidad Rancheria is especially vulnerable to the impacts of climate change. The historical climate is cool and wet with fog. Communities on the northwest coast can expect the following. (U.S. Environemntal Protection Agency (EPA), 2016)

- Sea level rise.
- Increased coastal erosion.
- Wetlands become submerged.
- Increased flooding.
- Increased temperatures – greater evaporation which decreases river and stream flow.
- Increased water temperatures – increases frequency of toxic algae blooms that cause shellfish poisoning; increases invasive species.
- Glaciers retreating – snowpack has decreased since 1950.
- Snowpack melting earlier in the year.
- Decreased stream flow in the summer – harms agriculture.
- Coastal waters increase in acidity due to more carbon dioxide – inhibits shell growth in some shellfish; reduces productivity of oyster hatcheries; harms plankton.
- Warmer streams – harms Chinook and sockeye salmon, steelhead, and trout.
- Several fish species will decline.
- Wildfire may become more common – likely to double the area burned by the end of the 21st century.

- Increase in forest pests and disease.
- Harm to health and vulnerable people.

Where information is available, this section compares future projections of the impact of climate change using the Representative Concentration Pathway (RCP) 4.5 and RCP 8.5 scenarios. The RCP scenarios include predictions about the impact of economic activity, energy sources, population growth, and socioeconomic factors. There are four RCPs in current modeling and the larger the number, the greater the impact on the climate. RCP 4.5 is one of the moderate models, "in which radiative forcing is stabilized at approximately 4.5 W/m^2 after 2100." (Wayne, 2013) RCP 8.5 is one of the moderate models, "in which radiative forcing reaches more than 8.5 W/m^2 by 2100 and continues to rise." (Wayne, 2013) Essentially, the RCP 4.5 scenario involves human intervention to slow greenhouse gas emissions and RCP 8.5 involves greenhouse gases growing unmitigated.

2. Location:

Due to the limited size of the reservation and the global impact of climate change, the entire Trinidad Rancheria can expect to be impacted along with the Coast ecoregion (Figure 21), which is within the Marine West Coast Forest Level I ecoregion. Specifically, Trinidad Rancheria lies within the Level IV Coastal Lowlands ecoregion.

*"The **Coastal Lowlands ecoregion** contains beaches, sand dunes and spits, and low marine terraces below 400 feet (122 m) elevation. Characteristic features include wet forests, shallow freshwater lakes, estuarine marshes and low-gradient, meandering tannic streams and rivers... Mature forests in the region are dominated by a canopy of Sitka spruce, western hemlock, and Douglas-fir, with salal, sword fern, vine maple, and Oregon grape in the shrub layer. The Riparian zone supports red alder, western redcedar, and bigleaf maple with an understory of salmonberry; California bay-laurel is common in the south. Estuaries and coastal wetlands may feature Baltic rush, Lynby's sedge, tufted hairgrass, Pacific silverleaf, and seaside arrowgrass with shore pine, sweet gale, and Hooker's willow. Stabilized dunes support shore pine over salal, rhododendron, and evergreen blueberry, with dune wildrye, Chilean strawberry, and dune bentgrass. Soil textures range from silty clay loam to sandy loam." (Wikipedia, 2024)*

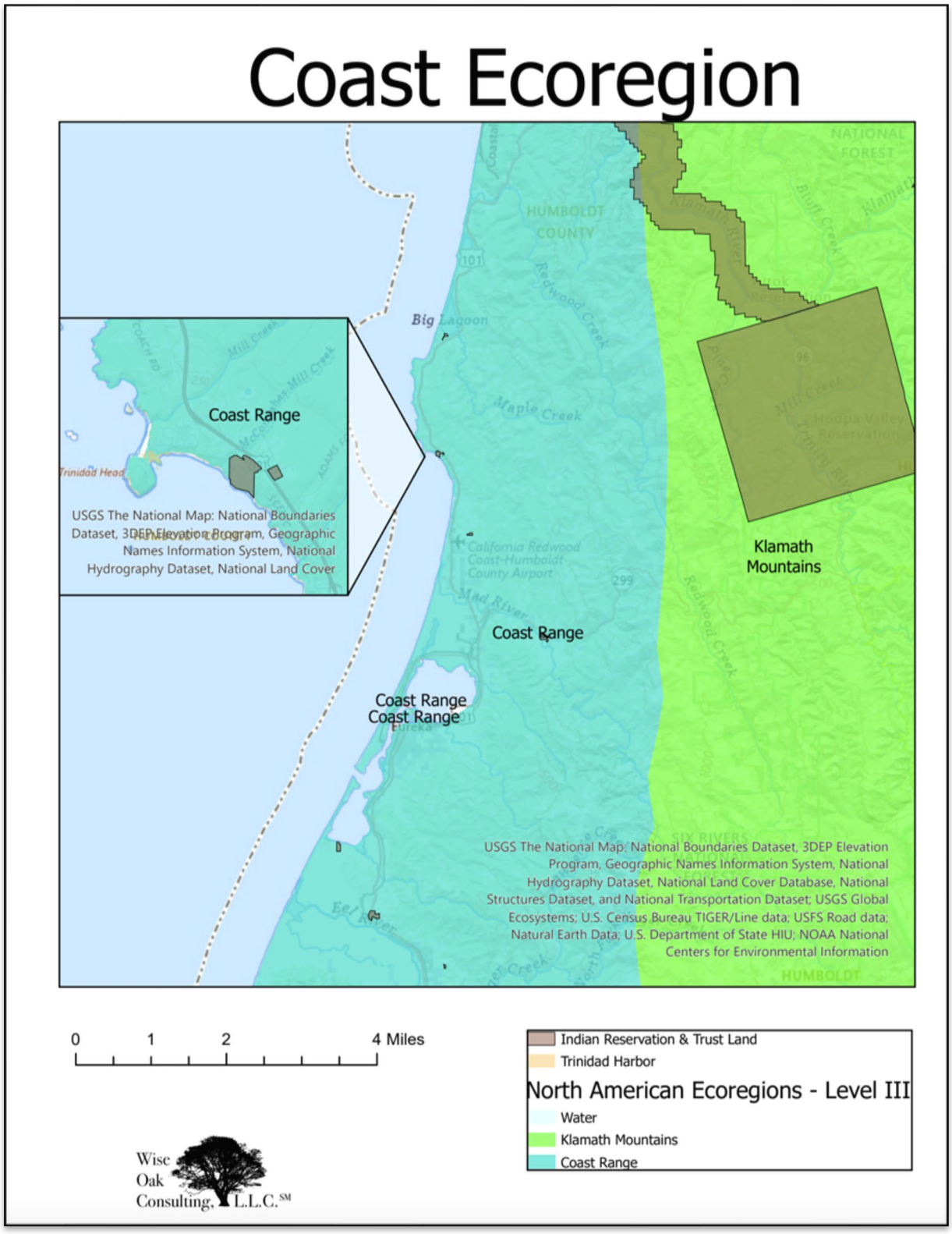


Figure 21. Trinidad Rancheria - Level IV Coastal Lowlands Ecoregion.

3. Extent:

Although sea level rise is addressed in its own section, it is important to recognize that it is a key effect of climate change globally.

The Tribe can expect temperatures to increase 2°F-3°F for the RCP 4.5 and 5°F-6°F by the end of the century (Figure 22). (University of California Merced, 2024)

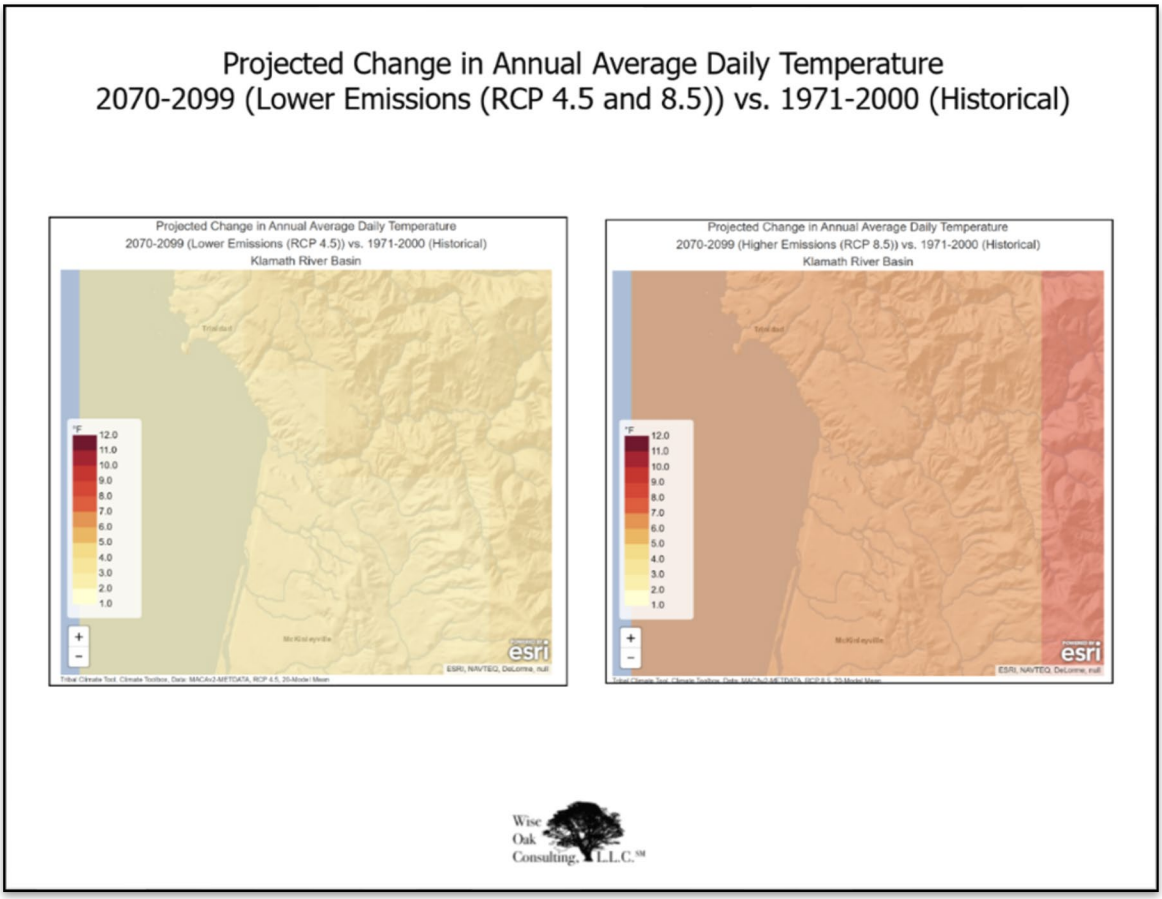


Figure 22. Comparison of Projected Temperature Rise for RCP 4.5 and RCP 8.5. (University of California Merced, 2024)

As depicted in Figure 23, Trinidad Rancheria can expect a 2%-10% increase in precipitation due to climate change.

Figure 23. U.S. EPA Climate Indicator for Precipitation.

While the total annual precipitation is expected to decrease, there is little projected difference between the RCP 4.5 and RCP 8.5 scenarios (Figure 24).

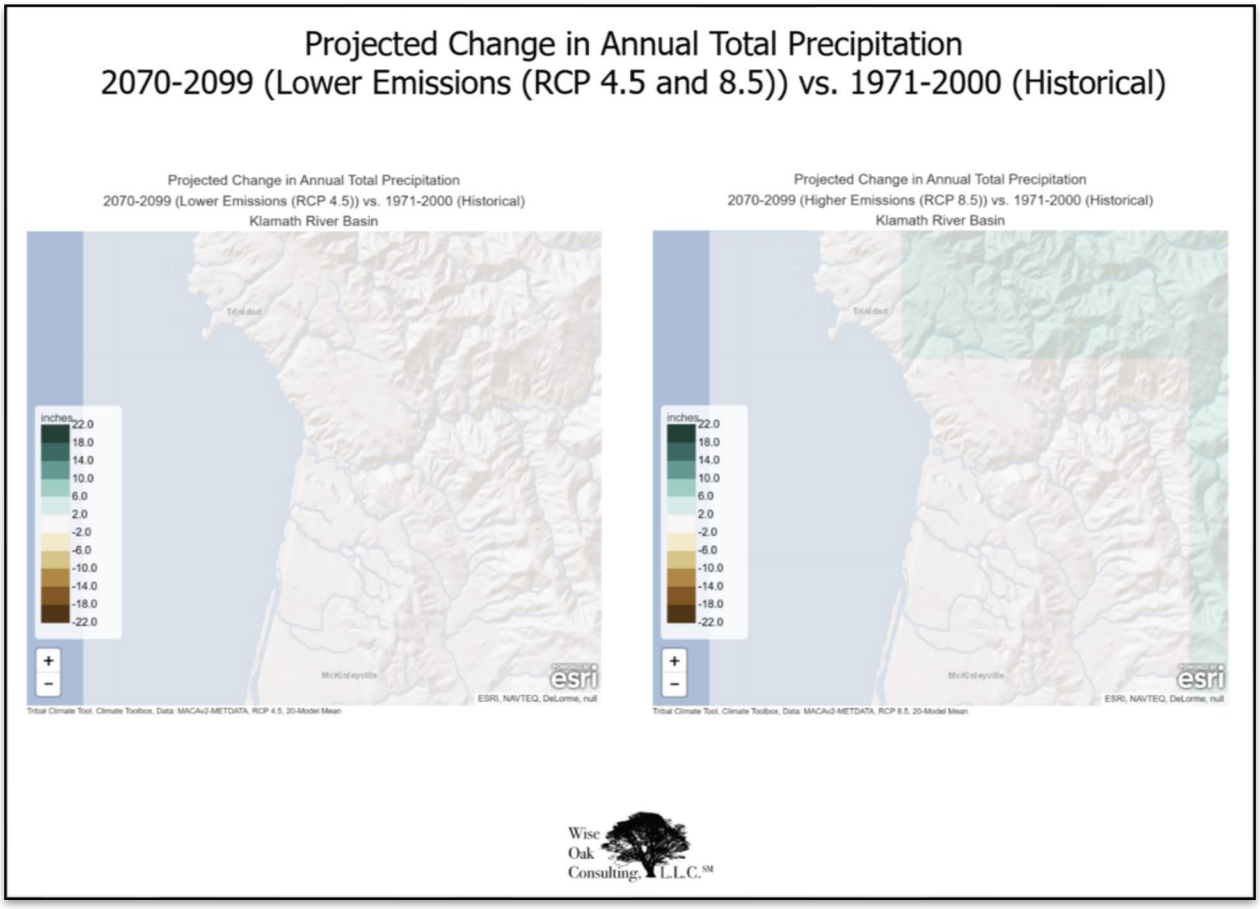


Figure 24. Comparison Projected Summer Precipitation Decrease for RCP 4.5 and RCP 8.5. (University of California Merced, 2024)

Climate change is also expected to alter the makeup of the forest for the general region; the vegetation surrounding Trinidad Rancheria itself is not expected to change in the RCP 4.5 or RCP 8.5 scenarios (Figure 25).

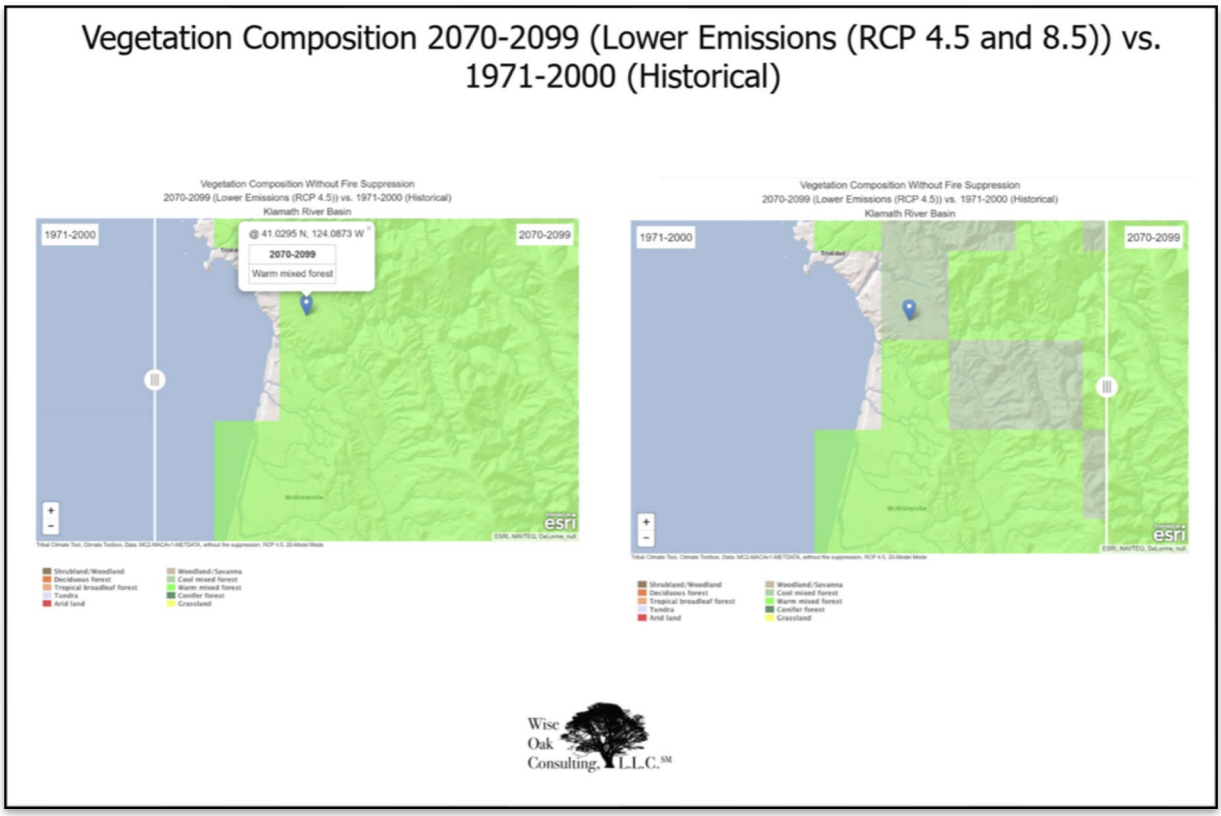


Figure 25. Projected Vegetation Change for RCP 4.5. (University of California Merced, 2024)

Wildfires have generally been increasing in frequency, intensity, and size in recent years. The U.S.E.P.A. assesses an increase in acres burned in a comparison between wildfires in 1984-2001 and 2002-2018 (Figure 26). With expected rising temperatures and less summertime water for vegetation, the Tribe can expect an increase in future wildfires.

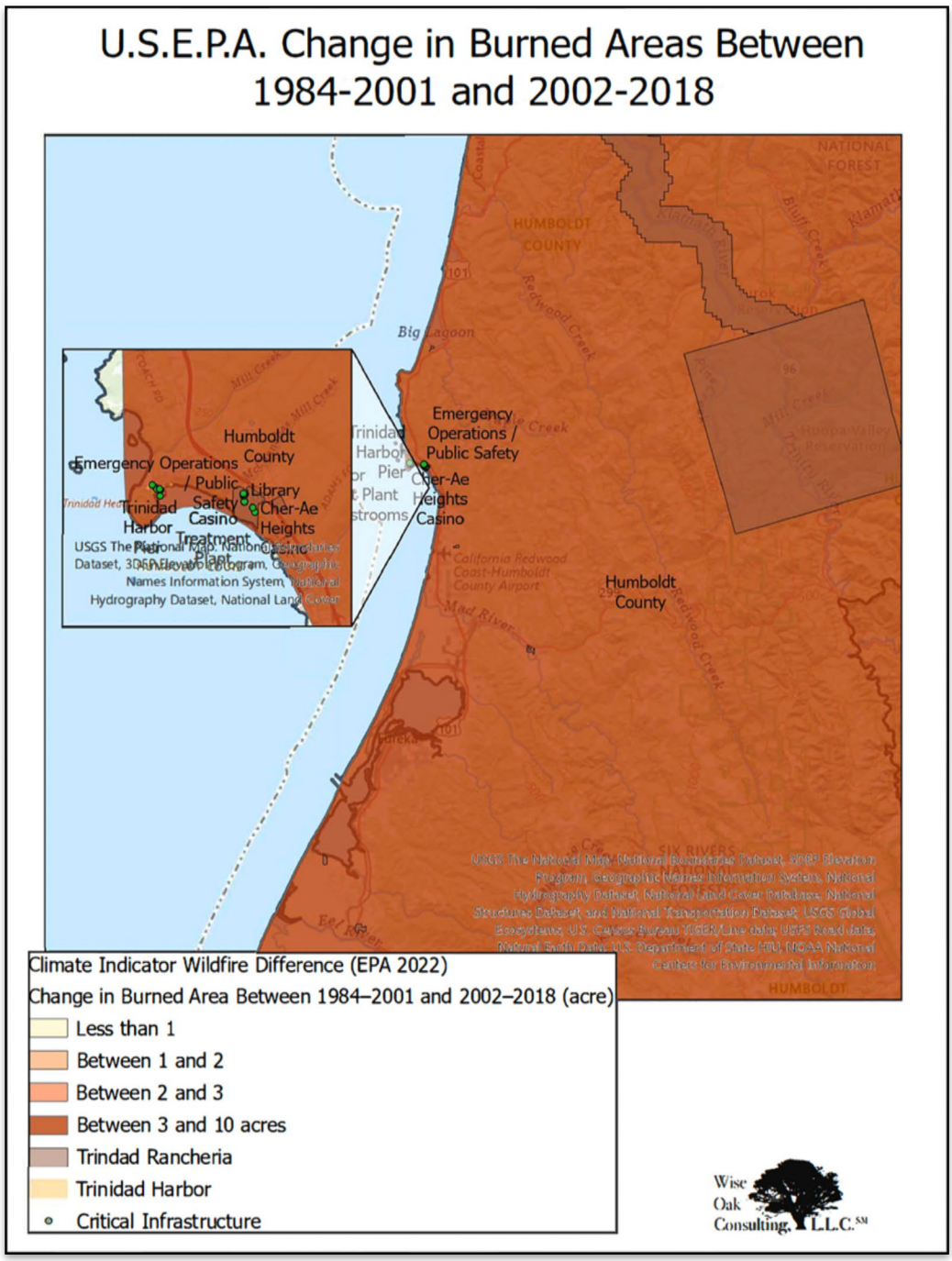


Figure 26. U.S. EPA Climate Indicator for Wildfire.

4. Previous Occurrences on Trinidad Rancheria:

As with coastal communities across the world, the Trinidad Rancheria has been directly impacted by the effects of climate change. As a coastal community, Trinidad Rancheria is seeing sea level rise and more severe weather.

5. Probability of Future Events:

Climate change is a certainty. The only question is how significant it will be. As described in the introduction of this section, the planning team chose the moderate RCP 4.5 scenario and extreme RCP 8.5 scenario to estimate the extent of climate change, which are reflected in the figures in this section.

6. Vulnerability of Trinidad Rancheria:

Changing Precipitation: Annual precipitation is expected to decrease (Figure 23). The expected decrease in precipitation (along with increased temperatures) will lead to a decrease in stream flow and increase in wildfire risk. The loss of groundwater and stream water in the warmer months will decrease direct access to water and leave the Rancheria more vulnerable during droughts. On the other hand, the greater severity of winter storms will likely lead to more flooding and landslide.

Changing Streamflow: While winter storms will lead to greater flooding and resulting erosion during that season, streamflow will decrease in the summer. Again, the loss of groundwater and stream water in the warmer months will decrease direct access to water and leave the Rancheria more vulnerable during droughts. In addition, reduced streamflow and ground moisture in the summer will increase vulnerability to wildfire.

Increased Wildfire: As described throughout this section, the increased temperature, decreased precipitation, streamflow, and ground moisture, along with the relocation to a forested region, will increase the Tribe's vulnerability to wildfire. While a quantitative assessment will depend on the nature of the new infrastructure and funding available for mitigation measures, what is clear is the Rancheria is in an ecosystem more prone to wildfire.

Sea Level Rise. The resulting sea level rise (addressed in another section) results in ocean water inundation at Trinidad Harbor.

Increased Ocean Acidity: The Rancheria's largest source of non-gaming revenue is Trinidad Harbor. In particular the Dungeness Crab season is a significant source of revenue that the Rancheria counts on. A collapse of Dungeness Crab would eliminate a major source of revenue both directly from crab sales and indirectly due to the loss of use of Trinidad Harbor services.

7. Impact on Trinidad Rancheria:

As depicted in the figures in this section, the entire reservation is impacted. The natural impacts are thoroughly depicted under "Extent" in this section. While sea level rise is detailed in another section, it directly impacts Trinidad Harbor.

As depicted under Extent in this section, the effects of climate change include an increase in risk to wildfire, severe storms, changes in precipitation patterns, and changes to both land and marine life.

While the new responsibilities for the Indigenous Marine Stewardship Area (IMSA) have not yet been fully scoped out, climate change will result in an ever- increasing effort in the IMSA to protect sea life.

8. Impact of Climate change:

Since this section describes the impact of climate change, no additional information is included here.

2. Coastal Erosion

"Many of California State's bluffs, beaches, and estuary mouths are already eroding, which will likely increase with sea level rise." (California Coastal Hazards Resilience Network 2024)

1. General hazard description:

As a coastal community, the Yurok People who largely populate Trinidad Rancheria have lived with the effects of both coastal erosion and deposition throughout their existence. Coastal erosion is the loss of coastal land due to sediment being moved by various forces – water, wind, ice, or gravity. The opposite effect is when sediment or woody debris that have been moved from another location are deposited and create new landforms or topography – coastal deposition. The causes of coastal erosion and deposition include:

- **"Longshore currents** – when ocean currents move parallel to shore, they move water and materials along shorelines. Sections of shoreline where materials are transported from a source area to a deposition area are called "drift cells."
- **Storms** – high-energy waves and extreme water levels can erode the land and affect how material moves within drift cells, streams, and other coastal waterways.
- **Flooding** – inundation can carry away sediment, redistributing it elsewhere. Conversely, river flooding can carry sediment to the coast, leading to deposition.
- **Sea Level Rise** – as water levels increase, tides and high energy waves may reach further inland, potentially causing erosion in new places.
- **Human Activities** – shoreline development, shoreline armoring (such as riprap—large rocks—and bulkheads—wood, concrete, or metal walls), removal of vegetation, recreation (such as hiking on sensitive bluffs or boating with large wakes), and other activities can increase the rate of erosion in a given location." (Washington Coastal Hazards Resilience Network 2024)

2. Location:

Coastal erosion represents an existential threat to Trinidad Rancheria. As can be seen in Figure 27, the Pacific Institute projects that by the year 2100 coastal erosion will subsume the 18 tribal homes within the Main Parcel, Tribal Operations, The Heights Casino, Sunset Restaurant, Wastewater Treatment Facility, and RV parking area (yellow line). In addition, sea level rise and coastal erosion will result in coastal flooding that will submerge Trinidad Rancheria's harbor assets. (blue band). (Pacific Institute)

Figure 27. Pacific Institute Sea Level Rise Hazard Map.

3. **Extent:**

Again, as seen in Figure 26, coastal erosion presents a long-term existential threat to the current lands of Trinidad Rancheria as long-term coastal erosion will subsume all parcels west of Highway-101. While mitigation measures can help delay coastal erosion in certain locations, the entire Northwest faces the inevitable effects of coastal erosion.

4. **Previous Occurrences on Trinidad Rancheria:**

Trinidad Rancheria has not had a "Coastline Erosion Disaster," per se. In fact, FEMA does not list coastline erosion as an incident type in any past disasters. Figure 28 depicts the effects of coastal erosion above Seascape House on the road to Trinidad Head. At the current rate of erosion, Trinidad Head will lose its road access within a few years of the writing of this Plan.

Figure 28. Coastal Erosion Encroaching on the Trinidad Head Access Road.

However, given that the coastal bluffs are measurably eroding, and coastal erosion represents a long-term existential threat to Trinidad Rancheria, it must be addressed.

5. Probability of Future Events on Trinidad Rancheria:

As with climate change, coastline erosion is a certainty as it is a natural force. Unfortunately, climate change creates multiple factors that exasperate coastal erosion such as sea level rise and stronger and more frequent storms. The only question is determining how quickly it will materially affect Trinidad Rancheria's members and assets.

6. Vulnerability of Trinidad Rancheria:

Again, the loss of land and risk due to other coastal hazards has put the entire Reservation at risk and has resulted in the relocation of the Tribe. Trinidad Rancheria Tribal elders relate memories of subsistence gathering and prayer activities all along the coastline from the Luffenholtz Beach area to Trinidad Harbor and beyond. Subsistence fishing for crab, salmon, surf fish (smelt), mussels, and clams occurred regularly from the rocky beaches within the Rancheria's borders. Families would set up fish camps during the dry months and would harvest and dry these important resources. The Trinidad Harbor provides cultural resources and beneficial uses to this marine-dependent community and is central to the cultural and economic life of the community.

Buildings and Infrastructure

As depicted under Location and Extent, virtually all of the Tribe's critical infrastructure is vulnerable to coastal erosion. Housing to the east of Highway-101 is the most protected from the direct effects of coastal erosion.

Economic Assets

All of the Rancheria's business enterprises are in long-term danger for coastal erosion. However, due to their proximity to the ocean and soil type, Seascape House, Seascape Restaurant, the Boat Launch, and Pier are most immediately at risk.

Natural and Cultural Resources

Coastal erosion directly impacts cultural artifacts, especially those on Trinidad Head and along the bluffs below Scenic Drive. Again, the tidelands at Trinidad Harbor are part of the 34 Areas of Special Biological Significance (ASBS); these are ocean areas monitored and maintained for water quality by the State Water Resources Control Board. The water surrounding the Harbor supports an unusual variety of aquatic life and hosts unique individual species. Coastal erosion directly impacts water quality in Trinidad Harbor.

7. Impact on Trinidad Rancheria:

In the near time frame, erosion is threatening the Seascape House above the Trinidad Harbor (Figures 29 and 30), the property on the ocean side of The Heights Casino (Figure 31), Cher-Ae Lane (Figure 32) and multiple locations along Scenic Drive (Figures 33-35).

Figure 29. Erosion on Trinidad Head Access Road Next to Seascape House.

Figure 30. Erosion Below Seascape House (Trinidad Head Access Road to left).

Figure 31. Erosion on Ocean Side of Heights Casino.

Figure 32. Erosion/slide on Cher-Ae Lane.

Figure 33. Scenic Drive Shoulder Erosion.

Figure 33. Scenic Drive General Erosion.

Figure 35. Scenic Drive Pavement Erosion.

Coastal erosion affects the pristine water quality of tributaries, Trinidad Harbor (and other marine habitats), and impacts important marine resources including salmon, clams, abalone (as both food sources and for the shells, which are used in ceremonial regalia), mussels, seaweed, eels, crab, surf fish, candle fish, and sea salt.

The economic impact of coastal erosion is as follows:

- Critical infrastructure at risk to long-term coastal erosion - $22,068,220
- Tribal homes at risk to long-term coastal erosion - $3,428,167

8. Impact of Climate change:

Two main factors that drive erosion are water and wind. Climate change creates more severe and frequent storms, along with the resulting increase of waves, floods, and winds. Climate change causes greater coastal erosion not just during storms but the ongoing wave and wind action. "El Niño winter storms contributed to storm surge, large waves, coastal erosion, and flooding in low-lying coastal areas." (Barnard, 2017) Along the coast, severe winter storms and strong El Niño events are projected to occur more often.

Sea level rise and larger waves, especially due to the increasing intensity of storms, are significant factors in coastal erosion. The same, increasingly powerful storms that bring larger waves also lead to greater precipitation and runoff. Greater wind erosion can also be expected due to greater winds caused by warmer oceans. In addition, the coastline depends on sediment deposits. Both a lower flow from streams and rivers and manmade "armoring" of coastline (ostensibly to protect from erosion) can lead to less sediment, exasperating the coastal erosion.

3. Drought

1. General hazard description:

Due to its relatively mild and wet climate (Figure 36), drought was historically not a major hazard of concern at Trinidad Rancheria. However, changes in climate and weather patterns over the last decade have resulted in an increased risk due to drought.

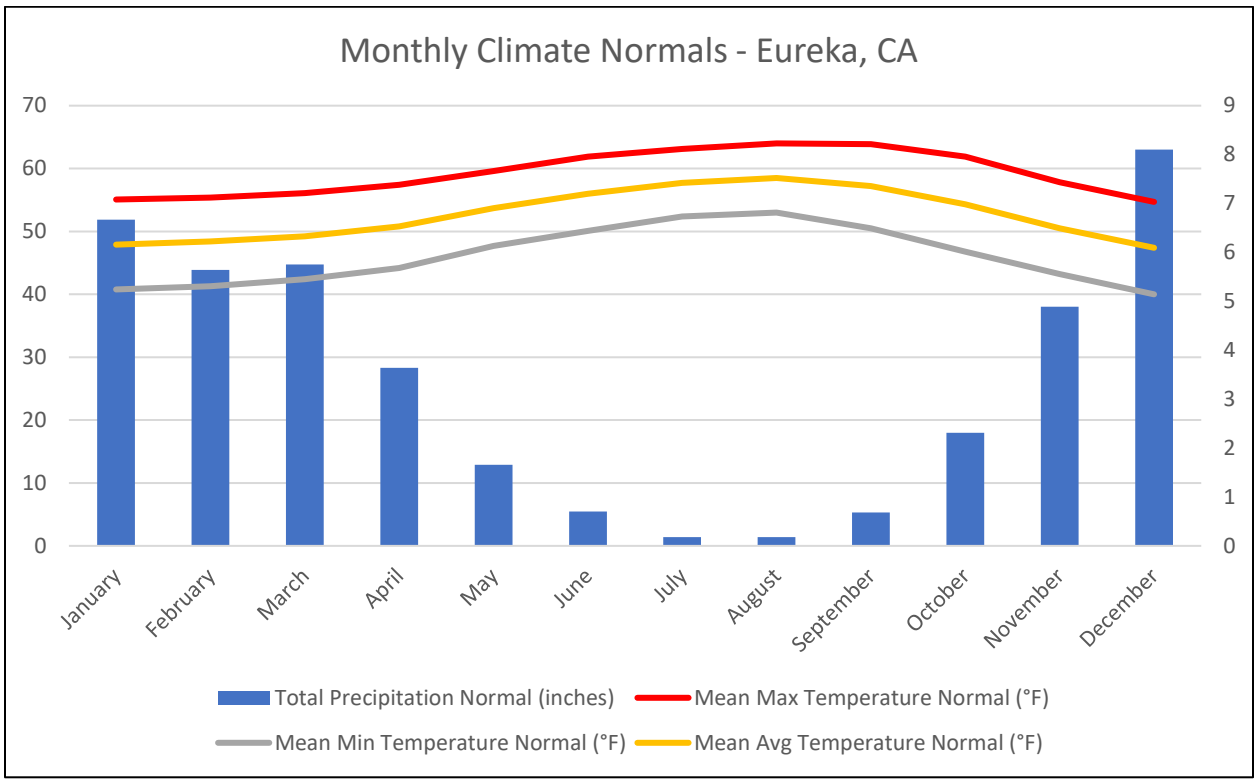


Figure 36. Monthly Climate Normals – Eureka, CA.

Drought occurs when it is drier than normal for the location and time of year. The American Meteorological Society defines drought as unusually dry weather that causes negative impacts. Different regions, sectors and individuals within a region can be differently impacted by the same drought.

Typically, lack of precipitation is the primary driver of drought, but higher than normal temperatures can cause or worsen drought. With warmer temperatures, the atmosphere's demand for moisture increases, so evapotranspiration is higher. With higher evapotranspiration, plants and soils dry more rapidly, and water levels in streams, lakes, and reservoirs drop more than would be expected given the precipitation shortfall. Drought can also change patterns of water use, increasing the need for agricultural irrigation and residential watering. Figure 37 depicts the interaction of several factors that determine drought conditions.

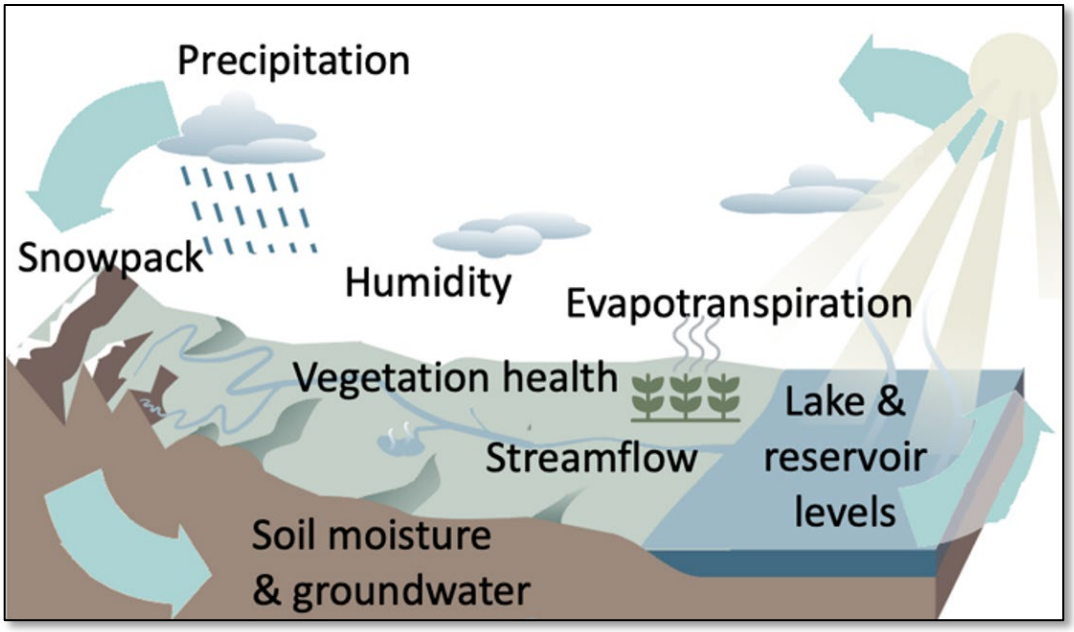


Figure 37. Types of Data the U.S. Drought Monitor Uses in its Analysis. (U.S. Drought Monitor, 2024)

When winter temperatures are higher, precipitation is more likely to fall as rain instead of snow, and the snowpack can melt earlier. In much of the West, the winter snowpack is an important reservoir within the water resource system. As such California lakes and reservoirs typically have more water stored in snowpack than there is in the reservoir portion of the lake (i.e. water levels above the natural rim). Figure 38 shows this phenomenon, as in the later winter and spring, there is more water stored in the Northern California snowpack than there is in the reservoir portion of the lakes (i.e. water levels above the natural rim). As a result, receiving less snow than usual can strain water resources and ecosystems, even if the overall amount of precipitation is normal. This is referred to as snow drought.

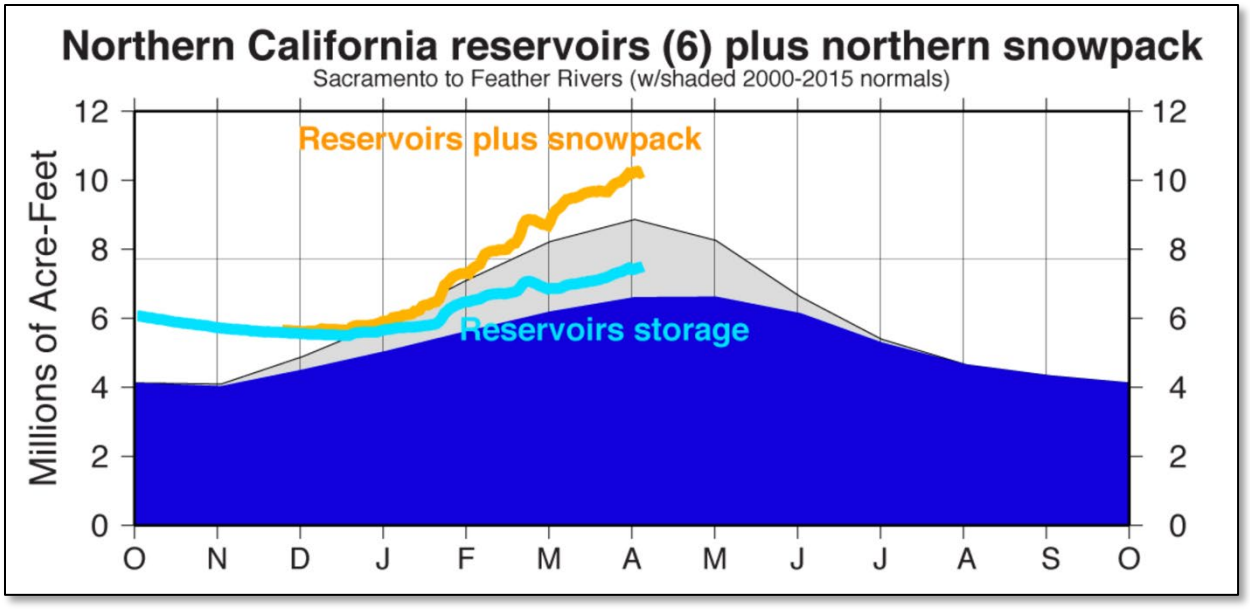


Figure 38. Snowpack and Reservoir Storage in Northern California Reservoirs. (UC San Diego: Scripts Institution of Oceanography, 2024)

In Figure 38, the average reservoir and lake storage between 1981 and 2010 are shown with blue and gray shading, respectively. The light blue and orange lines show water storage in the lake and snow from October 2022 through February 2023.

Drought can be tracked in a variety of ways. Currently, the U.S. Drought Monitor is the most commonly used tool. It is a joint effort from the U.S. Department of Agriculture, the National Oceanic and Atmospheric Administration, and the National Drought Mitigation Center, located at the University of Nebraska-Lincoln. The U.S. Drought Monitor provides information about drought status as a weekly map and narrative; it has been used to track drought since 2000. To compile the map, authors assess many lines of evidence including information about precipitation, temperature, reservoir storage, soil moisture, and crop and vegetation conditions. There are four (4) levels of drought, increasing in severity:

- D0 Abnormally Dry (not yet dry enough to be in drought)
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought.

Figure 39 depicts the Drought Monitor assessment at the time of the writing of this plan, showing how Humboldt County is assessed to have no drought conditions.

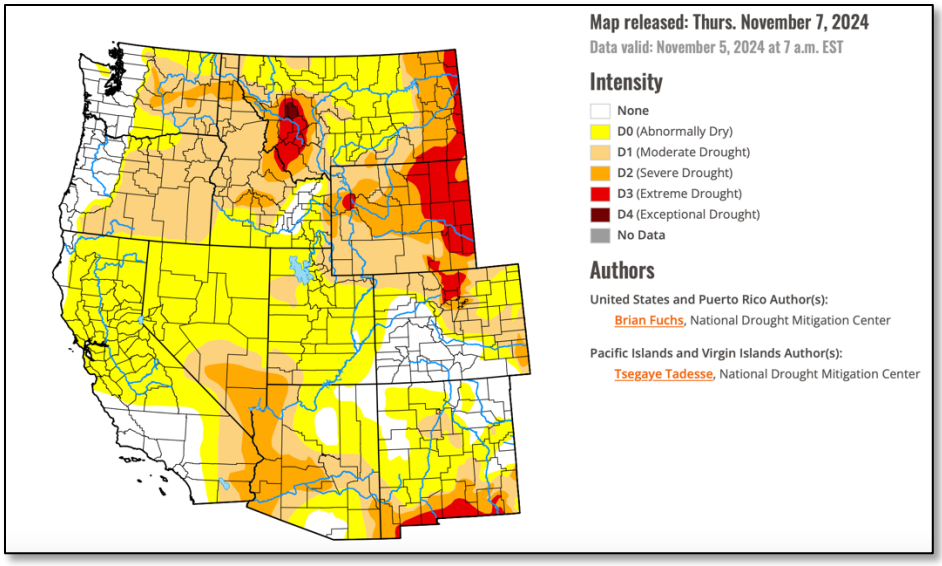


Figure 39. U.S. Drought Monitor Current Conditions as of November 7, 2024. (U.S. Drought Monitor, 2024)

As of the writing of this Plan, the U.S. Drought Monitor does not predict a drought through December 2024 (Figure 40).

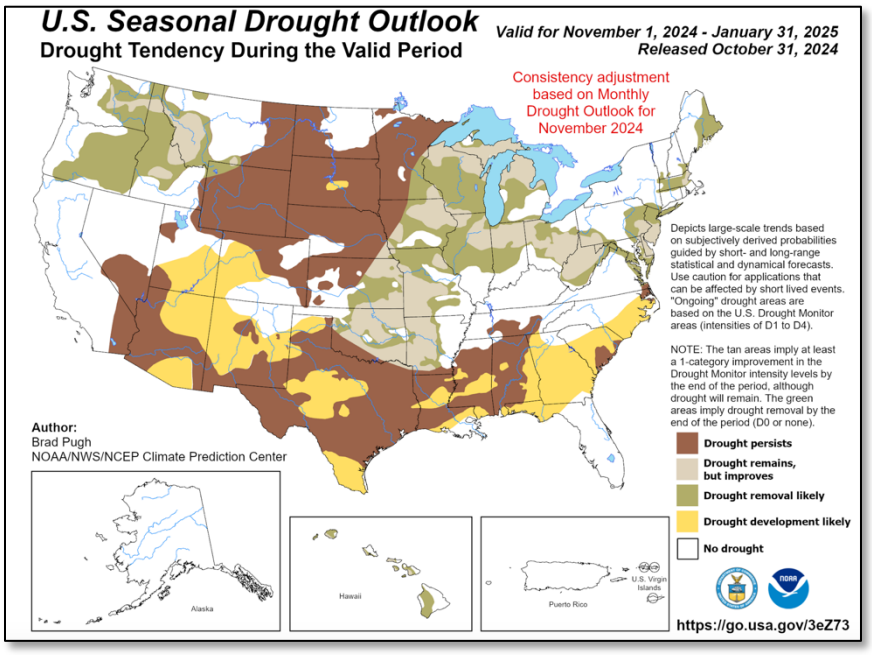


Figure 40. U.S. Drought Monitor Seasonal Outlook as of October 31, 2024. (U.S. Drought Monitor, 2024)

Due to both human development and natural forces such as climate change, "The risk of drought and the frequency, intensity, and duration of heat waves are expected to increase." (County of Humboldt, 2014) This is particularly true for the State of California. However, due to its coastal location, generally damp climate, and multiple water sources, the most significant drought impacts were secondary to other natural hazards such as an increase in wildfires.

2. Location:

Due to its small size, the entire reservation is affected by drought. As seen in Figure 41, the National Risk Index (NRI) for drought in the census tract that encompasses Trinidad Rancheria is Relatively High. The greatest challenge is the lack of robust freshwater sources.

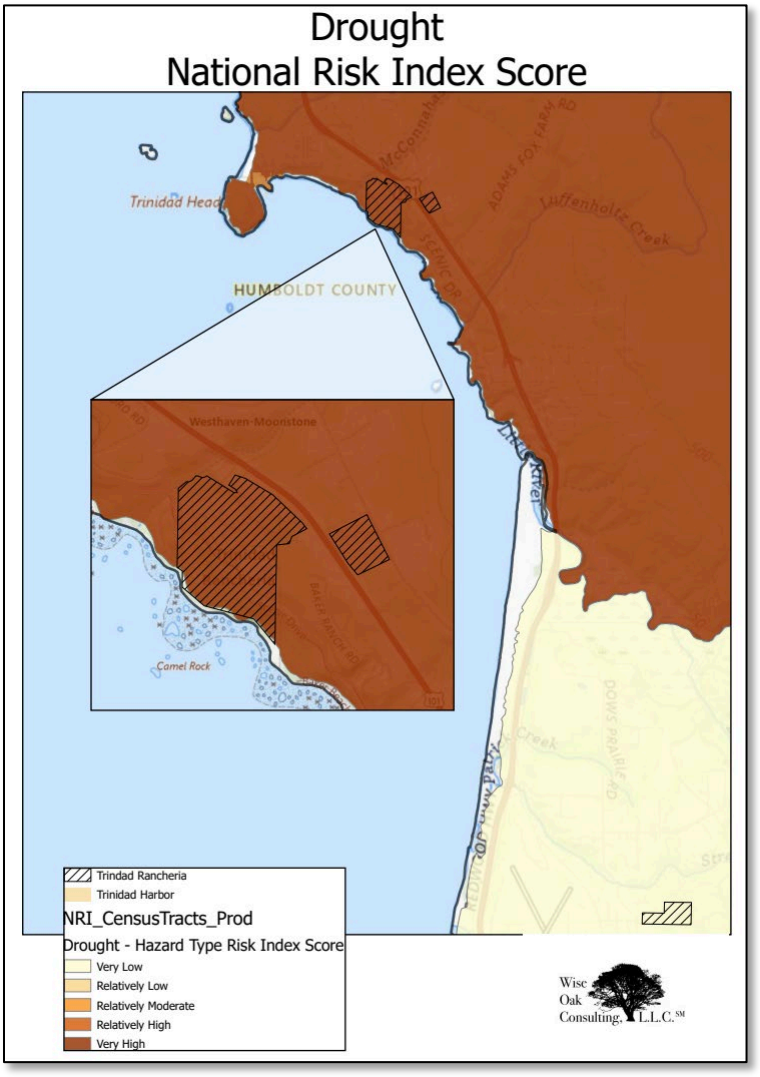


Figure 41. Drought National Risk Index Score.

3. Extent:

Most of the effects are indirect such as higher prices for food and beverage items that are from drought-prone areas. Trinidad Rancheria does not have an agriculture-based enterprise and does receive substantial moisture from its coastal location, insulating it from droughts. However, growth in Humboldt County in general, and with enterprises on the Rancheria specifically, is straining water sources. The City of Trinidad controls the water supply to the Rancheria, making a sudden lack of water a real risk. While the Tribe has drilled multiple wells, it has assessed that it requires additional water sources to ensure continued supplies.

Since the formation of the Rancheria, the Tribe has been impacted by drought. During previous water shortages and droughts in 1982 and 1987, the Trinidad Rancheria experienced impacts due to reduced Humboldt County Community Service District water supplies. In addition to rationing from its own allocated water supplies, Humboldt County had to deal with neighboring counties petitioning for Humboldt's designated allocation. The result is that Trinidad Rancheria may face significant water shortage impacts through the indirect effect of competition for supplies from surrounding counties even more than direct impacts of drought conditions themselves.

Water shortage conditions caused the Trinidad Rancheria to implement the following response actions:

- Voluntary water use reduction
- Drilling groundwater wells
- Drilling exploratory wells for future restrictions (ongoing)
- Seeking additional water sources from Humboldt Bay

While Trinidad Rancheria has drilled wells in response to historic drought conditions, it was not able to install the required infrastructure to move groundwater (pipe and/or other means), treat it, and store it.

4. Previous Occurrences on Trinidad Rancheria:

Living in the western regions of the United States, the Yurok, Wiyot, and Tolowa peoples have been accustomed to natural variations in climate cycles and drought conditions that have impacted Yurok, Wiyot, and Tolowa people since before recorded history. Like other Native Americans living in this region, the Yurok, Wiyot, and Tolowa people moved seasonally between the ocean and the mountains, according to rainfall and temperature cycles. The ability to move Tribal villages as necessary to be near water sources allowed our ancestors to adapt to periods of abundant rainfall and drought conditions. This cultural adaptability remains; however, the physical ability to move Tribal homes to new areas was removed when the Yurok, Wiyot, and Tolowa people were required to live on a reservation. This created

new challenges, because the Tribe had to remain in one place and survive off of local water sources, regardless of whether rainfall was plentiful or limited.

Due to Trinidad Rancheria's purely coastal location and water supplies, drought has historically resulted in negligible impact to the Tribe, even in the most extreme historical drought conditions. Except for the 1940s through the 1960s, California's drought history indicates that there have been multiyear droughts every decade between 1900 and 2000, all of which had mild to moderate effects in Humboldt County. Conservatively speaking, Humboldt County can expect to experience the direct effects of drought at least once every decade. This does not include the effects that would result from droughts impacting water dependent counties that rely on Humboldt County water.

"Historically, drought patterns in the West are related to large-scale climate patterns in the Pacific and Atlantic oceans. The El Niño–Southern Oscillation in the Pacific varies on a 5- to 7-year cycle, the Pacific Decadal Oscillation varies on a 20- to 30-year cycle, and the Atlantic Multidecadal Oscillation varies on a 65- to 80-year cycle. As these large-scale ocean climate patterns vary in relation to each other, drought conditions in the U.S. shift from region to region. El Niño years bring drier conditions and more fires to the Pacific Northwest." (County of Humboldt, 2014, pp. 15-5)

Although Humboldt County was not included in the Federal disaster declaration, both County residential and industrial water supplies were affected. In addition to rationing from its own allocated water supplies, Humboldt County had to deal with neighboring counties petitioning for Humboldt's designated allocation.

The 1977 extreme California drought conditions affected water supplies for civilian and industrial interests throughout Humboldt County and were some of the worst in the County's history. Not only were water supplies compromised for the County's use, but the drought forced neighboring counties to petition for additional drawdown of water resources allotted from Humboldt County.

While no County in California has received a presidential disaster declaration for drought, Humboldt County has received 10 U.S. Department of Agriculture (USDA) drought declarations (Table 20) since 2012.

Table 20. U.S. Department of Agriculture Drought Declarations in Humboldt County.

Date	USDA Declaration	Comment
February 21, 2012 – May 14, 2012	S3268	The 2012–2016 drought was the latest of five severe droughts to grip the state in the last 120

Table 20. U.S. Department of Agriculture Drought Declarations in Humboldt County.		
Date	**USDA Declaration**	**Comment**
June 18, 2013 – August 12, 2013	S3565	years. It unfolded in a context of record statewide temperatures, which exacerbated the impacts of water shortage, setting new markers for extreme conditions.
January 1, 2014 – continuing	S3637, S3644	
January 1, 2015 – continuing	S3784	
January 1, 2016 – continuing	S3952, S3964	
October – December 2018	S4467	July was the warmest month in the history of the State. Record-breaking temperatures across the State amplified already dangerous fire conditions where vegetation fuels were exceptionally dry and prone to ignition.
April – September 2020	S4675, S4691	Precipitation was below average, and temperatures were above average. For maximum temperature, August 2020 came in second to 1967. For September, the maximum temperature ranked sixth warmest. Five of the State's largest six fires in history were ignited in August and September.
October 2020 – May 2021	S4916	The 2021 water year was the second driest on record, with extreme heat and lack of precipitation. By the end of 2021, all 58 counties in California were placed under a drought emergency proclamation (State of California 2022). The drought has continued through 2022; as of April 2022, the snowpack of the Sierra Nevada was at 38% of its statewide average (Becker 2022). The State experienced $1.2 billion in crop damage because of this drought period.
October 2021 – April 2022	S5146	
October 2022 – February 2023	S5371	The 2023 water year began below average.

5. Probability of Future Events on Trinidad Rancheria:

Drought is a certainty in California as whole. As described in the Climate Change hazard profile, the expected increase in temperature, decrease in rainfall, and decrease in streamflow points to an increase in drought in the future. The National Risk Index estimates 28.6 events per year. Essentially, the region can assume it will continually be in drought conditions.

6. Vulnerability of Trinidad Rancheria:

Because it has insufficient ground and surface water supplies on its own, Trinidad Rancheria is currently reliant upon its water supply from the City of Trinidad. However, the City of Trinidad has first priority and can limit the Rancheria's water supply. In addition, the Town of Trinidad does not support the Tribe's economic expansion that requires an increase of water supply. In the worst case of a severe drought, the Rancheria could be left with zero water supply even though water is available in Humboldt County. Trinidad Rancheria is seeking to mitigate this potential by acquiring an additional water supply from the Humboldt Bay Municipal Water District. This will require additional infrastructure and/or trucking to distribute the water to Trinidad Rancheria.

7. Impact to Trinidad Rancheria:

As described in Vulnerability, Trinidad Rancheria assumes that it could face a complete loss of water supply in a severe drought. At a lesser level, the Rancheria's economic expansion plans could be delayed or curtailed if it cannot source sufficient water supplies.

To date, Humboldt County has only experienced mild to moderate drought conditions. Because it does not directly rely upon agriculture, Trinidad Rancheria does not face a direct, commercial risk due to drought from agriculture. However, in addition to the indirect effect of a reduced water supply, the Tribe's traditional way of life is impacted by drought. Drought can lead to sudden and major change and/or loss of habitat for plants and animals. The change can affect biodiversity, decrease air and water quality, and accelerate soil erosion. Trinidad Rancheria may need to take measures to protect the native species the Tribe relies upon including Red Alder (*Alnusrubra*), Douglas fir (*Psuedotsugameziesii*), Blue blossom or soap plant (*Ceanothusthyrsiflorus*), Bracken Fern (*Pteridiumaquilinum*), Sword Fern (*Polysticummunitum*) and Sitka Spruce (*Piceasitchensis*), and various other roots and herbs. Tribal members regularly gather these plant materials for medicinal and cultural uses.

8. **Impact of climate change:**

Table 21 reflects some expected impacts from drought due to climate change.

Table 21. Impacts of Climate Change to Drought.	
Public Health	• Potential for mental health impacts. • Increased dust due to drying and lowered surface and ground water levels.
Water Resources	• Increase demand and decreased supply, limiting water availability for all sectors.
Environment	• Drought impacts to plant health and growth. • Drought impacts on animal health. • Potential for plant mortality. • Poorer water quality.
Recreation & Hospitality	• Loss of revenue if enterprise expansion cannot be completed.
Agriculture/Aquaculture & Ranching	• Loss of boat launch revenue if water quality affects marine life.

4. Earthquake

1. General hazard description:

While earthquakes occur nearly daily in California, most are too small to be felt or cause damage. While they are less common, large earthquakes can cause significant damage to infrastructure - buildings, roads, bridges, dams, utilities, etc.

California has the highest risk in the U.S. of these large and damaging earthquakes because of its geologic setting. The Pacific coastline is subject to intense shaking, liquefaction, land subsidence, and devastating tsunamis.

Figure 42 depicts the three main types of faults.

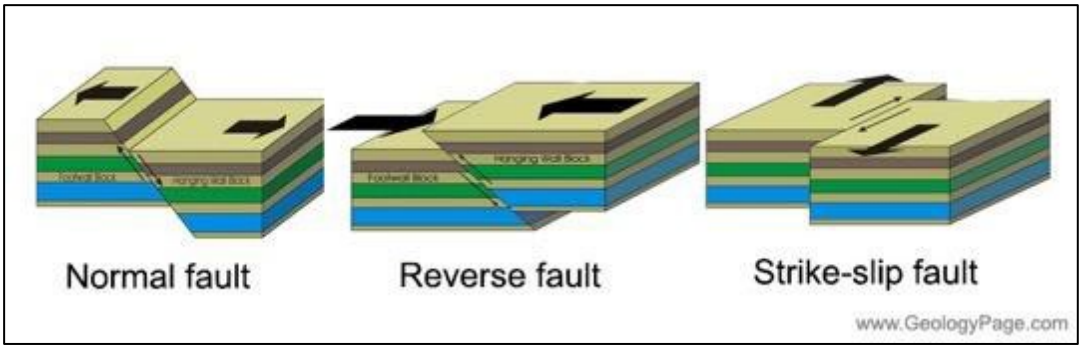


Figure 42. Three Main Types of Faults. (Geology Page 2017)

Normal Faults occur when two blocks are pulled away from each other. Because California is generally in compression, there are few of these types of faults in the state.

Reverse faults occur when two blocks are pushed together and one moves up and over the other. The Seattle fault is of this type, and, when it ruptures, the south side will move up relative to the north side.

Strike-slip faults occur when two blocks move past each other. The San Andreas fault in California is a well-known strike-slip faults.

The severity of ground motion generally increases with the amount of energy released and decreases with distance from the fault or epicenter of the earthquake. Ground motion causes waves in the earth's interior, also known as seismic waves, and along the earth's surface, known as surface waves. There are two kinds of seismic waves. P (primary) waves are longitudinal or compressional waves similar in character to sound waves that cause back-and-forth oscillation along the direction of travel (vertical motion). S (secondary) waves, also known as shear waves, are slower than P waves and cause structures to vibrate from side to side (horizontal motion).

There are also two kinds of surface waves: Raleigh waves and Love waves. These waves travel more slowly and typically are significantly less damaging than seismic waves.

In addition to ground motion, several secondary hazards can occur from earthquakes, such as surface faulting. Surface faulting is the differential movement of two sides of a fault at the earth's surface. Displacement along faults, both in terms of length and width, varies but can be significant (e.g., up to 20 feet), as can the length of the surface rupture (e.g., up to 200 miles). Surface faulting can cause severe damage to linear structures including railways, highways, pipelines, and tunnels.

Earthquake-related ground failure due to liquefaction is another secondary hazard. Liquefaction occurs when seismic waves pass through saturated granular soil, distorting its granular structure and causing some of the empty spaces between granules to collapse. Porewater pressure may also increase sufficiently to cause the soil to behave like a fluid for a brief period and cause deformations. Liquefaction causes lateral spreads (horizontal movements of commonly 10 to 15 feet, but up to 100 feet), flow failures (massive flows of soil, typically hundreds of feet, but up to 12 miles), and loss of bearing strength (soil deformations causing structures to settle or tip). Liquefaction can cause severe damage to property.

The intensity level, shaking, and damage are often defined by the Modified Mercalli Intensity Scale (Figure 43).

Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest,especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

Figure 43. Modified Mercalli Intensity Scale. (Society, 2024)

Section II: Hazard Identification and Risk Assessment

Studies have established the Cascadia Subduction Zone Earthquake as the worst-case disaster scenario in the Pacific Northwest. The Cascadia Subduction Zone (CSZ) is an 800-mile-long offshore fault, stretching from Northern California to Vancouver Island in Canada (Figure 44). Based on historical data, modeling, and simulation, a magnitude (M) 9.0 CSZ earthquake off the coasts of Northern California, Oregon, Washington, and British Columbia will be immediately devastating. Tsunami inundation and ground shaking will push widespread damage inland, resulting in high numbers of potential fatalities, hospitalizations, evacuees, and destroyed buildings. The event could also trigger a long list of cascading effects within the entire Northern California region and surrounding states, including possible severe long-term economic impacts. Conventional response efforts and capabilities will be quickly overwhelmed.

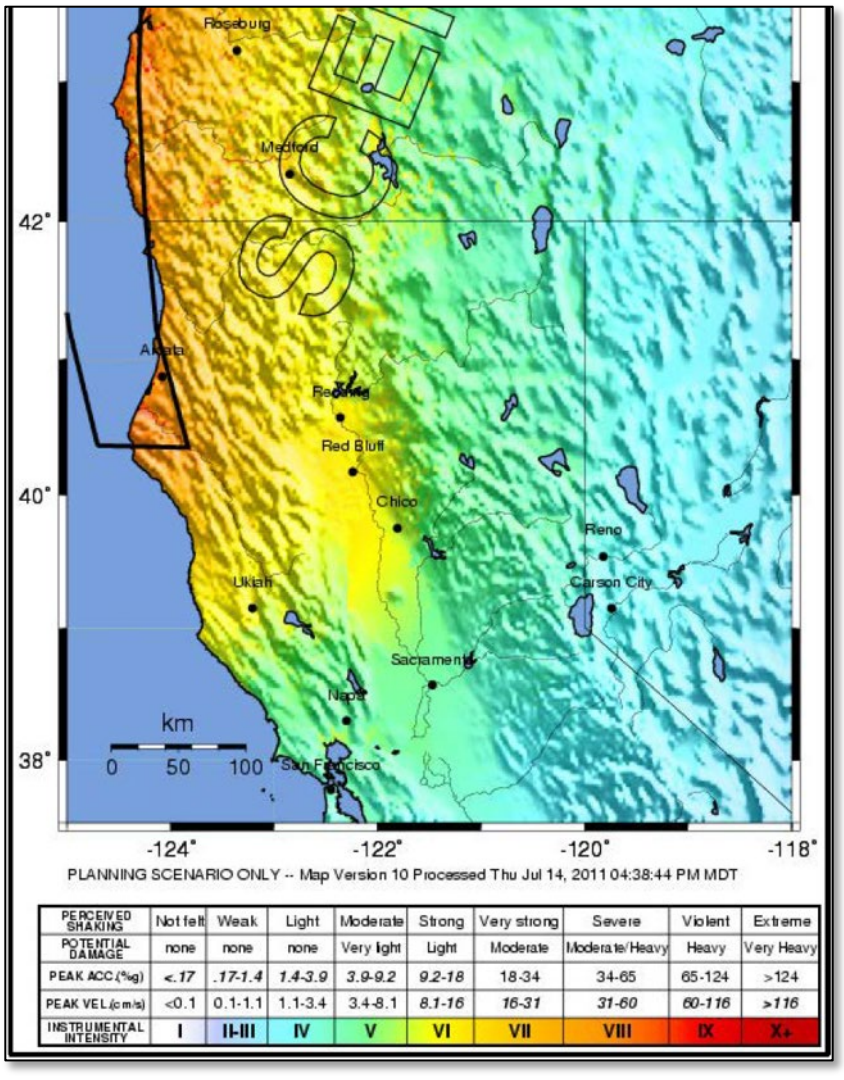


Figure 44. Cascadia Subduction Zone ShakeMap.

As depicted in Figure 45, the National Risk Index Score for the census tract encompassing the Rancheria is Very High. Whether due to a local temblor or the Cascadia Subduction Zone, Trinidad Rancheria has a high earthquake risk.

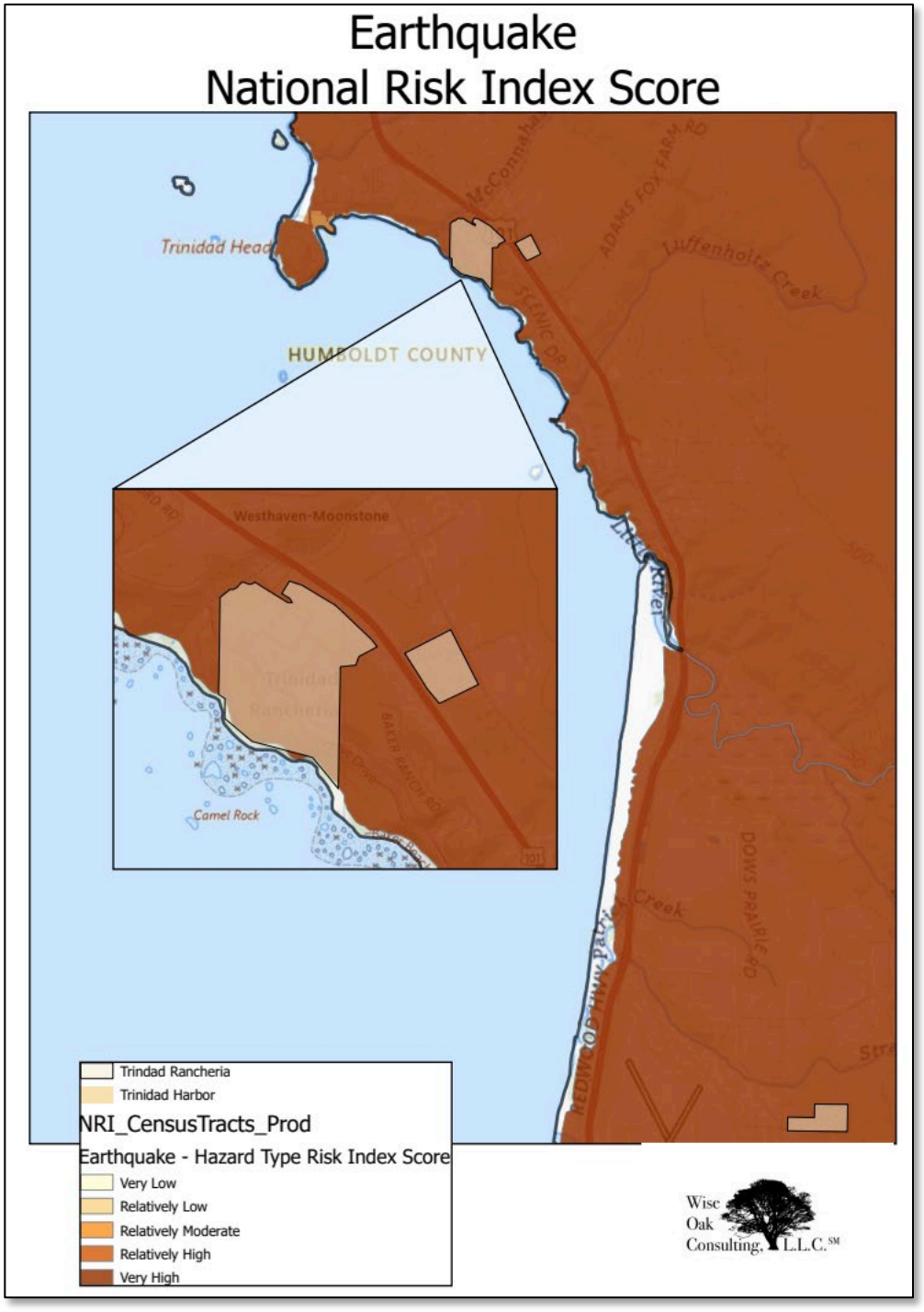


Figure 45. Earthquake National Risk Index Score.

Section II: Hazard Identification and Risk Assessment

2. Location:

In addition to the Cascadia Subduction Zone, The Mad River Fault Zone runs through the entire planning area (Figure 46).

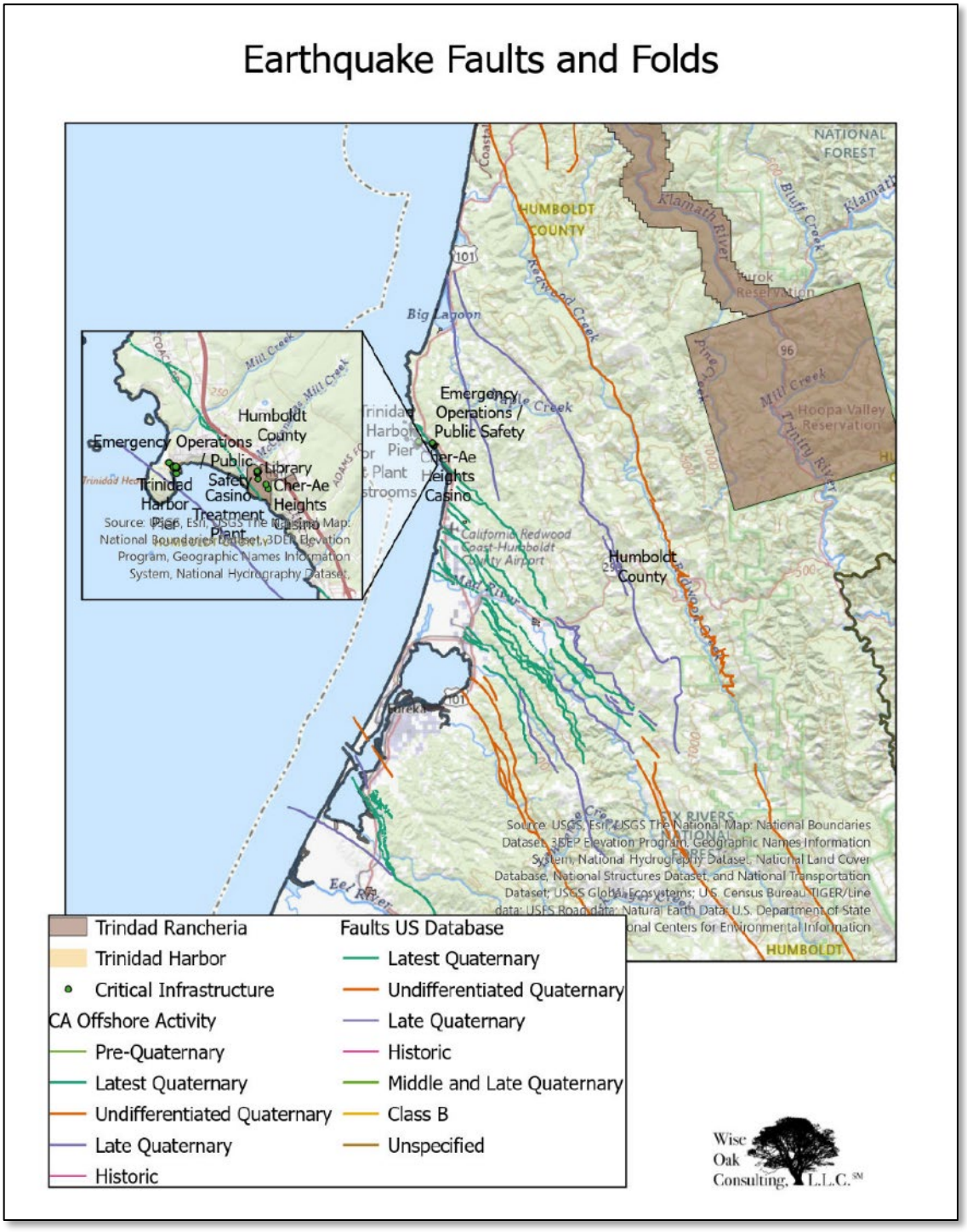


Figure 46. Mad River Fault Zone.

3. **Extent:**

Again, as can be seen in Figure 44 above, the entire planning area can expect to feel Very Strong to Severe shaking due to a M 9.0 Cascadia Subduction Zone earthquake.

The magnitude of earthquakes from the Mad River Fault Zone have yet to be determined.

The shaking is only one of the impacts from a CSZ earthquake. The secondary hazards caused by a Cascadia Earthquake would have much more severe impacts than the earthquake itself.

- A tsunami would most likely destroy the people, buildings, and infrastructure at sea level.
- Landslides could block Highway 101, limiting access in and out of the reservation, and preventing emergency services from accessing the area except by air or possibly boat.
- As of the writing of this Plan, liquefaction has not been mapped along the Mad River Fault Zone.

4. Previous Occurrences on Trinidad Rancheria:

While Trinidad Rancheria is in a zone with a large number of faults, the last fault displacement was between 200 and 11,700 years ago (Figure 47). The local faults have not displaced in more than 200 years.

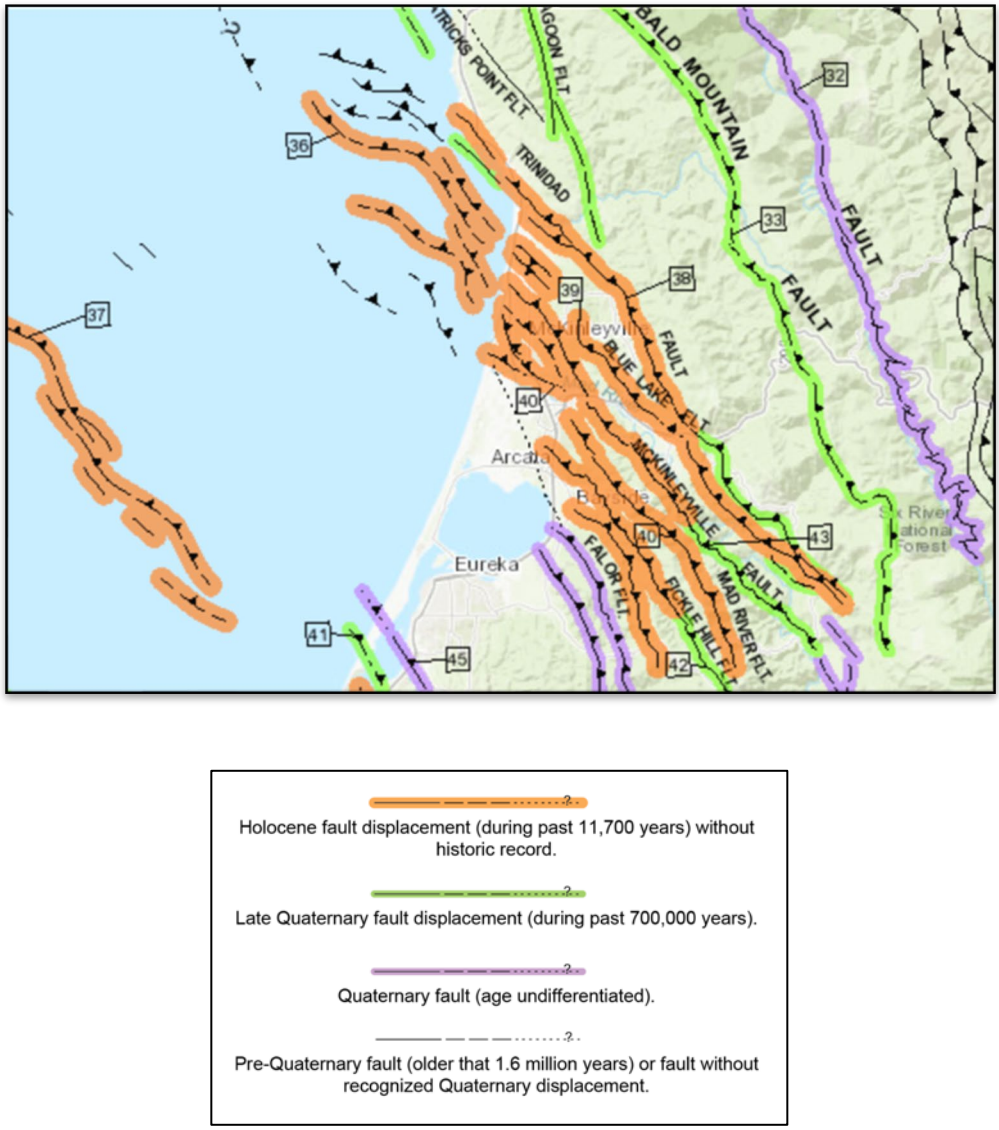


Figure 47. Fault Activity Map. (California Department of Conservation, 2024)

Figure 48 depicts the epicenters of historic earthquakes from 1769-2015.

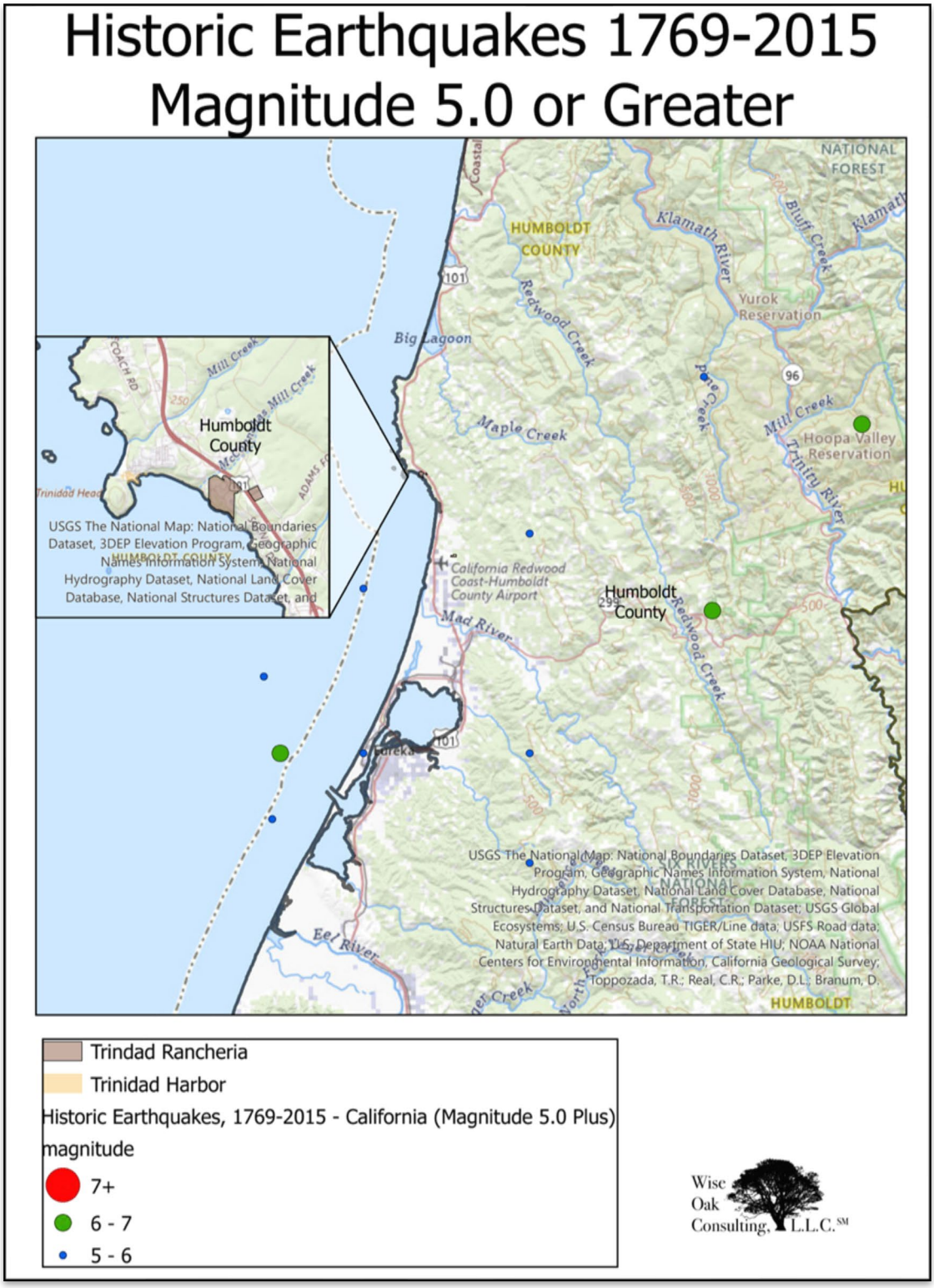


Figure 48. Earthquakes Near Trinidad Greater than M 5.0, 1769-2015.

Section II: Hazard Identification and Risk Assessment

The 1992 M7.2 Cape Mendocino (Petrolia) Earthquake is the only Federally declared disaster in the vicinity of Trinidad Rancheria due to an earthquake since 1953. The ShakeMap shows that Trinidad Rancheria felt light to moderate shaking that would result in little to no damage (Figure 49). The Earthquake generated a 21-inch tsunami that struck Crescent City in 47 minutes. (Wikipeia, 2024)

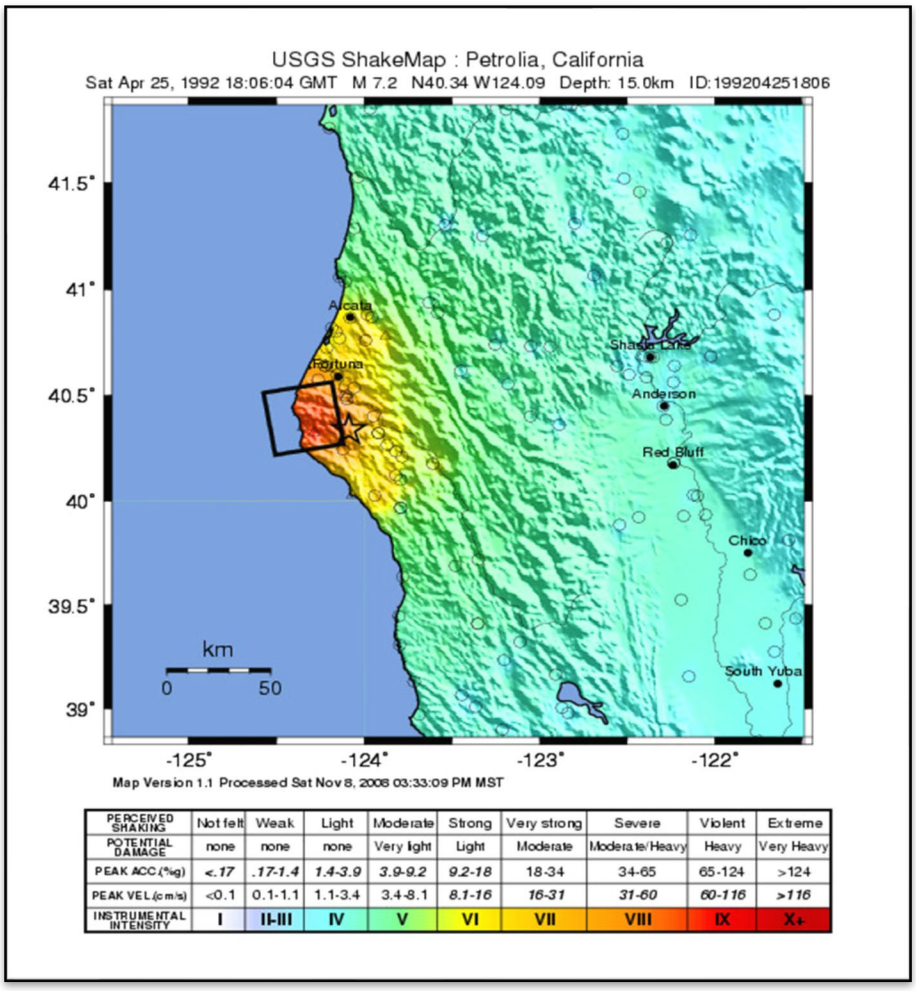


Figure 49. Cape Mendocino Earthquake ShakeMap.

5. Probability of Future Events on Trinidad Rancheria:

The Cascadia subduction zone last ruptured over 300 years ago on January 26, 1700. The average time between large earthquakes is about 535 years, but has been as little as 200 years, and more than 1,000 years.

Other faults in the region could be produce strong earthquakes, but it is not known at this time if there has been past activity or what magnitude a future event could generate.

Figure 50 depicts the probability of a M≥7.5 earthquake within 5 years and 50 kilometers of Eureka.

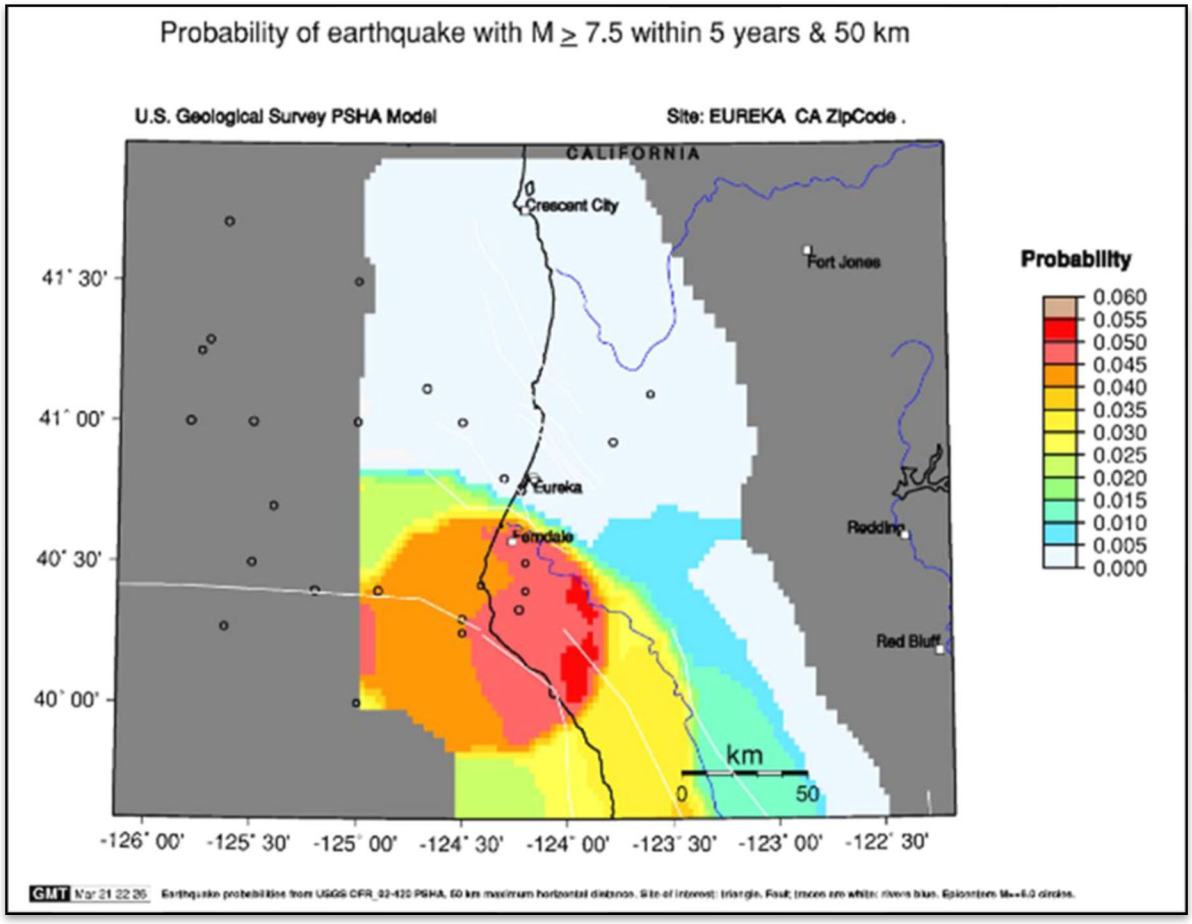


Figure 50. Earthquake Recurrence Probability Map of Humboldt County.

The National Risk Index estimates a 0.797% chance of an earthquake per year.

6. Vulnerability of Trinidad Rancheria:

Across the planning area, structures can expect to experience light to great damage depending on the construction of each. However, secondary effects may be even more significant. Slides are likely especially along the roads that border buildings along Cher-Ae Lane and Scenic Drive. If Scenic Drive is cut, the 18 Tribal homes along the drive are inaccessible. In addition, Tribal Operations, The Heights Casino, Sunset Restaurant, Wastewater Treatment Facility are also cut off and inaccessible. Trinidad Rancheria could be completely isolated due to slides and/or a tsunami along Highway-101.

7. Impact on Trinidad Rancheria:

Although the Cascadia Subduction Zone Earthquake is a catastrophic event, Trinidad Rancheria can expect light to moderate earthquake damage (Figure 43). The most significant effects will likely be indirect, including isolation and loss of utilities due to damaged infrastructure. According to the Modified Mercalli Intensity Scale, Trinidad Rancheria can expect to feel strong to very strong shaking. At the upper end of the modelling, Trinidad Rancheria can expect:

- **VI Intensity** – Strong shaking that is felt by all. Many people will be frightened, and some heavy furniture will move. A few instances of fallen plaster may occur. Damage will be minimal.
- **VII Intensity** – Damage should be negligible in buildings of good design and construction. Damage can be expected to be slight to moderate in well-built ordinary structures and considerable in poorly built or badly designed structures; some chimneys may be broken.
- **VIII** – Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture may be overturned. Sand and mud might be ejected in small amounts. Changes in well water may occur. Motorists might be disturbed.

The tsunami impacts will be discussed in their respective sections in more detail.

8. Impact of climate change:

While the impact of climate change on earthquakes is difficult to predict, recent research suggests that melting ice sheets and sea level rise may trigger more earthquakes and volcanic eruptions. (Yale University, 2012)There is evidence that there was a great increase in geological activity as the climate rapidly changed at the end of the last ice age 12,000 years ago. The theory is that melting ice relieved great pressure on the earth that had dampened geological activity. In addition, there is a theory that sea level rise as well as shifts in the oceans during El Nino years also changes the pressure exerted on the ocean floor, also triggering earthquakes. (Yale University, 2012)

5. Epidemic

1. General hazard description:

An infectious disease (aligns with the Nation Risk Index hazard Pandemic) that appears suddenly or presents in greater than normal numbers for a particular location is considered an outbreak. An infectious disease that occurs in greater than normal numbers in several communities or that crosses geographical boundaries is considered an epidemic. The same infectious disease that involves a large population in several countries or continents is considered a pandemic. The use of these terms is somewhat subjective and frequently used interchangeably. Infectious diseases emerge, suddenly or gradually, in various environments, and may spread across a region or even the world. If the disease was previously unknown, then the disease is said to be a *novel disease*. If the disease had never occurred in the region before, it is considered a virgin soil outbreak. If the disease is continuing to spread, or rapidly increasing in incidence or range, it is considered an emerging disease.

These terms are used to illustrate the number of occurrences, size, or scope of the disease impacts and the healthcare sector's familiarity with the disease; the terms do not indicate the virulence, mortality, or morbidity of a particular illness. Epidemics are described as contemporary health catastrophes by the World Health Organization (WHO). Epidemics are commonplace in the world. According to the WHO, every country on earth has experienced at least one epidemic since the year 2000. Some epidemics such as H1N1 (2009), SARS, Ebola and COVID-19 have developed into pandemics with a global reach. Far more often, epidemics strike at lessor geographic levels, causing loss of life and livelihoods on a more regional or local level.

Although epidemics and outbreaks of disease have traditionally been associated with disease caused by infectious agents, in the second half of the 20th century the term epidemic has also become associated with non-infectious disease such as obesity and diabetes, or disease caused by lifestyle and environmental factors such as smoking-related heart disease and cancer clusters. In this plan, we will address only epidemic disease caused by infectious agents.

The impact of outbreaks of pathogens on communities differs depending upon the disease, the population of the community, the age of the primary targets, socio-economic situation of the community affected, and the public health and medical response capabilities of the affected community. For example, 100 cases of meningitis across Las Vegas may be a concern, but 10 cases of the same meningitis may close the entire school system in Fallon. Four deaths from an infectious disease may not stretch public health resources in Reno but may create an emergency in Yerington.

Section II: Hazard Identification and Risk Assessment

"Epidemics almost always produce unanticipated questions and novel problems which are likely to vary over the course of the outbreak. Recognizing these problems when they arise and formulating effective responses requires adequate and timely situational awareness." (IQT, 2023) "There is an observable pattern of indicators associated with the demand placed on healthcare and public health infrastructures by routine verses non-routine infectious disease. Indicators of a health security crisis evolve as the extent of the impact to a given community change from that of an event to crisis to disaster. Different patterns of indicators are associated with different types of infectious diseases (e.g., respiratory disease verse mosquito-transmitted disease) and some indicators are considered critical and especially characteristic for health security crisis and cannot be missed due to the potential for high consequences." (Wilson, 2022)

Disease outbreaks and epidemics are not confined to human populations. Diseases such as hoof-and-mouth disease and mad cow disease, if introduced into the livestock population, could decimate the beef industry for decades. In the past, global pandemics involving avian influenza and birds have also occurred.

Pandemic influenza and other emerging diseases present a major threat to life, economies, and security in an increasingly globalized world. The impact of disease epidemics has increased dramatically as the world becomes ever more interconnected. In the past 25 years, emerging diseases have included: HIV/AIDS, Hepatitis C, Ebola, Lyme disease, Hantavirus, SARS, MERS, COVID-19, Enterovirus D68 Ebola, and Chikungunya virus. Additionally, some "old-school" diseases are now re-emerging as the disease becomes resistant to anti-microbial medications and vaccines. These diseases include things such as: measles, TB, pertussis (whooping cough), and bacterial pneumonia.

Some challenges presented by epidemics:

- Epidemics associated with emerging and re-emerging infectious diseases are now occurring in historically unprecedented numbers.
- Inconsistent leadership and politicization of a health crisis creates considerable obstacles to emergency response and efforts to unify public trust.
- Warning operations are not specifically funded limiting maintenance of warning capabilities and public health and healthcare resources have to acquiesce to the "panic and neglect" cycles that characterize grant funding.
- Public health and hospital systems are weak in many areas and vulnerable populations are further stressed by social determinants of health.

- Climate change is believed to be contributing to emerging diseases such as Zika, Chikungunya, and other vector borne diseases progressing into new geographies .

2. Location:

Quite simply, infectious disease outbreaks can affect the entire Reservation, but also the State, Nation, and the World as a whole. Due to tourists that frequent the beaches as well as Tribal enterprises, Trinidad Rancheria can expect to be affected by general infectious disease outbreaks that cover the entire Reservation.

3. Extent:

Pandemic and infectious disease events cover a wide geographical area and can affect large populations, potentially including the entire population of the State of California. The exact size and extent of an infected population is dependent upon how easily the illness spreads, the mode of transmission, and the amount of contact between infected and uninfected individuals. The transmission rates of pandemic illnesses are often higher in denser areas where there are large concentrations of people. The transmission rate of infectious disease will depend on the mode of transmission of a given illness.

The magnitude of a pandemic or infectious disease threat in California will range significantly depending on the aggressiveness of the virus in question and the ease of transmission. Pandemic influenza is easily transmitted from person-to-person, but advances in medical technologies have greatly reduced the number of deaths caused by influenza over time – until COVID-19. As highlighted in Table 22, in terms of lives lost, the impact various pandemic influenza outbreaks have declined globally over the last century. But despite the unprecedented rapidity in which a vaccine was developed, the world saw the most deaths from a novel virus since the 1981 Spanish Flu.

Table 22. Significant Outbreaks of Influenza over the Past Century.

Date	Pandemic Name/Subtype	Worldwide Deaths (Approximate)
1918-1920	Spanish Flu / H1N1	50 million
1957-1958	Asian Flu /H2N2	1.5-2 million
1968-1969	Hong Kong Flu / H3N2	1 million
2009-2010	Swine Flu / A/H1N1	151,700-575,400 (as of April 2010) *
2019-2024	COVID-19	7 million**

*The range in fatalities is due to the underreporting of deaths in third-world countries, and the WHO has acknowledged that official, lab-confirmed reports are an underestimate.
Source: Global Security, 2009; WHO, 2009

**As of April 2, 2024. (World Health Organization, 2024)

4. Historical occurrences on Trinidad Rancheria:

An infectious disease outbreak, whether a secondary effect of natural hazards, or spread from nature, can have devastating impacts on Native communities. Native peoples' ancestors across the U.S. were nearly wiped by epidemics in the late 18th century and throughout the 19th century and possibly impacted by earlier outbreaks. The worst disease outbreaks include smallpox, malaria, and measles. Epidemics of Influenza, dysentery, yellow fever, bubonic plague, typhoid fever, cholera, and whooping cough also caused many deaths. As with the nation and world as a whole, Trinidad Rancheria was greatly impacted by COVID-19.

The 1918 Spanish Flu had a 50% morbidity 10% mortality rate that infected 500 million people worldwide and killed 50 million – 675,000 in the U.S. (Centers for Disease Control and Prevention, n.d.) Despite the advances in healthcare, especially in preventing and treating flu viruses, a novel influenza outbreak remains a serious hazard. The healthcare community still needs to be able to produce more broadly effective vaccines much quicker. In addition, vaccine distribution, cheaper and more effective treatments, and better surveillance of animal viruses are needed. Figure 51 depicts the three main waves of the Spanish Flu. It is likely that future pandemics will follow a similar trend with an initial outbreak that explodes in the second wave and then dampens down as vaccines and/or treatments are developed.

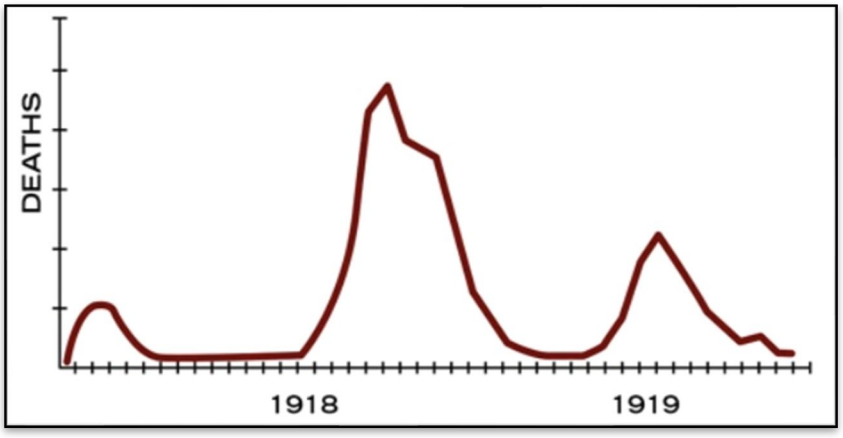


Figure 51. 1918 Spanish Flu Deaths. (Centers for Disease Control and Prevention, 2018)

In 2009, the public health community focused on, and developed vaccines specifically for, an expected avian virus (H5N1) outbreak. Instead, there was an H1N1 outbreak. The World Health Organization declared a pandemic as H1N1 rapidly spread around the world. In the United States, there were approximately 60.8 million cases, 274,304 hospitalizations, and 12,469 deaths. (Shrestha SS1, 2011)

Now endemic, COVID-19 emerged in December 2019 in China's Hubei Province, in the city of Wuhan. On January 18, 2020, the CDC reported the first laboratory-confirmed case of the 2019 Novel Coronavirus in the U.S. from samples taken in Washington state and on the same day

activated its Emergency Operations Center (EOC) to respond to the emerging outbreak. On February 28, 2020, the CDC reported four additional presumptive positive cases of COVID-19 in California, Oregon, and Washington; one case was likely travel-related, but three are likely due to community spread of the SARS-CoV-2 virus in the U.S. On February 29, 2020, the CDC and the Washington Department of Public Health reported the first death in an individual with laboratory-confirmed COVID-19 in the U.S. The patient was a male in his 50s who was hospitalized with a pneumonia of unknown cause and later died of his illness. On March 11, 2020, after more than 118,000 cases in 114 countries and 4,291 deaths, the WHO declares COVID-19 a pandemic. On March 13, the Trump Administration declares a nationwide emergency and issues an additional travel ban on non-U.S. citizens traveling from 26 European countries due to COVID-19. (Centers for Disease Control and Prevention, 2023)

In February 2023, the HHS Secretary gave a 90-day notice to Governors to prepare for the unwinding of the COVID-19 Public Health Emergency. The Federal Public Health Emergency (PHE) for COVID-19 expired on May 11, 2023. However, preventing the spread of COVID-19 remains a public health priority. (U.S. Department of Health and Human Services, 2023)

As of March 23, 2024, 6,901,176 people in the U.S. have been hospitalized and 1,186,671 have died from COVID-19. (Centers for Disease Control and Prevention, 2024) As of July 5, 2023, it was estimated that 77.5% of U.S. citizens ages 16 and older had been infected with COVID-19. (Centers for Disease Control and Prevention, 2023)

Although the spikes varied and waves continued longer than for the Spanish Influenza, COVID-19 generally followed the natural pattern of infectious diseases as shown in Figure 50. Future novel viruses may follow a similar pattern.

The 1918 Spanish Flu resulted in 200 fatalities out of a population of 13,000 in Humboldt County. (Coomber) One significant factor was the communal living in lumber camps. Because Trinidad Rancheria's casino, harbor operations, and two restaurants attract patrons from a large area, they represent places where an infection could be introduced and rapidly spread. Although the Tribe does face an epidemic risk, Tribal members do not consider it one of their most urgent concerns.

5. **Probability of Future Events:**

Endemic infectious diseases such as influenza and COVID-19 are a part of natural life that the Tribe faces on an ongoing business. Based on experiences ranging from the 1918 Spanish Flu to the 2009 H1N1, to the 2019 COVID-19 outbreak (to name just a few), it is a certainty that the Tribe (and the world) will face novel infectious diseases in the future as well.

"The probability and magnitude of infectious disease is difficult to evaluate due to the wide variation in disease characteristics, such as the reproduction number, virulence, morbidity and mortality, detection and response time, and the availability of vaccines and other forms of prevention. There is growing concern, however, about emerging infectious diseases due to new and more resistant strains of pathogens, also called "Super Bugs," and viral reassortments/recombination. The probability of a serious outbreak goes up as new resilient pathogens are identified. (State of Arizona, Department of Emergency and Military Affairs, 2018)

6. **Vulnerability:**

While infectious diseases impact state operations, they generally do not caused damage to assets. The most significant impact is on cleaning and disinfecting facilities and equipment. Perhaps one of the greatest concerns is that the reservation lacks medical facilities. The vulnerability of Tribal members is highly dependent on the nature of the disease itself, good public health, and preventative care practices. However, given the small Reservation size and close-knit community, any novel virus can expect to impact the entire Tribe.

7. **Impact on Trinidad Rancheria:**

Tribal communities continue to be among the vulnerable to United States epidemics and pandemics. Native Americans are at an extreme risk due to high rates of health problems, like diabetes and heart disease in a large elder population. Tribal communities also often have a higher rate of health needs, less funding, and access to medical care. Cultural traditions that include a large role in communal family and Tribal gatherings also can spread diseases.

The recent history and experience of the COVID-19 pandemic has taught us that the location of a pandemic doesn't have to be proximal to the Reservation to have major impacts to supply-chains or to our enterprises. The COVID-19 pandemic, when isolated to China was creating havoc on supply-chains in the United States even before the disease reached our shores. Once COVID-19 was detected within Washington, illness, hospitalizations, death, and economic and political turbulence wasn't far behind.

Based on a Spanish Flu-level of epidemic, approximately 50% of Tribal members would be affected (122 members, 21 elders, 24 children, 16 people with disabilities and access and functional needs both on and off of the reservation). A 10% mortality rate would mean 18 Tribal member fatalities, including 5 elders, 5 children, 4 people with disabilities and access and functional needs. If enterprises were required to close or lose substantial business due to social distancing, the loss of revenue could be in excess of $3,000 per day. An estimated 1/3 of the

workforce remaining home due to illness represents 67 of 200 staff out of work and $6,700 per day in payroll.

8. **Impact of climate change:**

The World Health Organization (WHO) has reported that, "Vectors, pathogens and hosts each survive and reproduce within a range of optimal climatic conditions: temperature and precipitation are the most important, while sea level elevation, wind, and daylight duration are also important." (World Health Organization, 2003) Specifically, the WHO has recorded a five-fold increase in malaria epidemic risk the year after El Nino events. Because moisture and temperature are such significant factors, elevated temperatures and extreme rain events resulting from climate change increase the risk. WHO models have shown that climate change increases the transmission of malaria and dengue fever worldwide and encephalitis in the U.S.

Climate changes may affect important determinants of vector-borne disease transmission including vector survival and reproduction, the vector's biting rate, and the pathogen's incubation rate within the vector organism.

Droughts can increase the dissemination of arboviral diseases in urban areas by allowing a boost in the population of mosquitoes in foul water when they gather in catch basins to breed. Furthermore, eggs can be vertically infected with arboviruses and heat waves speed up the maturation of the mosquitoes and of the viruses within mosquitoes. Droughts also cause a decline in mosquito predators like frogs, darning needles, and dragonflies. In addition, birds congregate around shrinking water sites, enhancing circulation of viruses among birds and mosquitoes. In conclusion, the seriousness of some of the recent epidemics like West Nile virus and Dengue appear to have been influenced by climate change. As most of the arboviral infections are asymptomatic in humans, there is an increased opportunity for blood, organ, and tissue donations by infected individuals during the viremic period, resulting in an increased risk of transmission of arboviruses.

6. Flood

1. General hazard description:

The major flood hazards are riverine flooding, coastal flooding, sediment build-up, and urban flooding. While Trinidad Rancheria does not lie in a floodplain and is not susceptible to riverine flooding, other flood risks are present. The Trinidad Harbor is susceptible to coastal flooding both due to long-term sea-level rise and large waves and swells during winter storms. A severe storm in conjunction with King tides can cause coastal flooding. "Multiple factors can combine to cause coastal flooding:

- Storm surge – changes in atmospheric pressure can elevate seawater levels during a storm, pushing more water toward the shore.
- Wind-driven waves – wind can push water higher and further onto land, causing coastal flooding.
- High tides and king tides – high tides can combine with other factors to cause coastal flooding. King tides are exceptionally high tides caused by one or more astronomical events.
- Sea level rise – as daily tides become higher, smaller magnitudes of storm surge, wind and other factors will result in coastal flooding.
- Increased river flows – increased river discharge (caused by changes in rainfall, groundwater storage, and melting snowpack) can combine with seawater levels to flood coastal areas.
- Tsunamis – these giant waves (caused by earthquakes and large landslides) can lead to particularly disastrous coastal flooding." (Washington Coastal Hazards Resilience Network 2024)

Topography affects how coastal flooding occurs. California is a geologically varied area with steep rocky coastlines, sandy shores, bays and estuaries. The variation in our shorelines means that coastal flooding has different intensities at different locations, which is amplified by changing wind conditions.

Flooding occurs primarily during the winter months. In the coastal areas, high spring tides and strong winds from winter storms that produce storm surges are responsible for coastal flooding. Heavy rains with some snowmelts produce the highest runoff flows in winter. The storms that produce storm surges also bring heavy rains; therefore, the high river flows are held basically by tides, producing the greatest flooding at river mouths, having sufficient cumulative water levels to create flood hazards in the adjacent communities.

Figure 52 depicts the National Risk Index Score of Relatively High for the planning area. Although there are no major rivers, the many creeks that cross the region channel a great amount of water from the hills above.

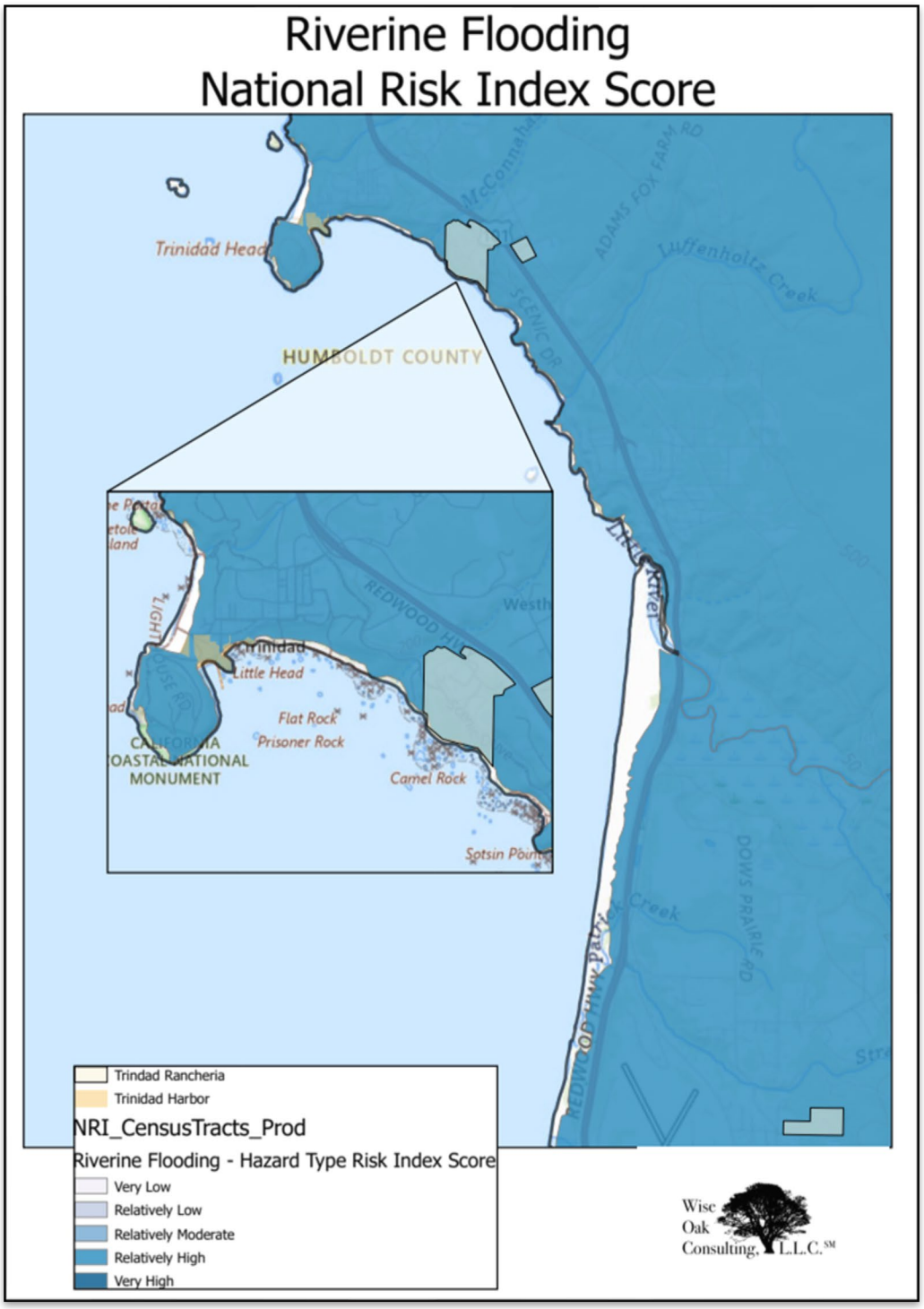


Figure 52. Flood National Risk Index Score.

2. Location

Figure 53 depicts the flood risk to Trinidad Rancheria. The Main Parcel, the Westhaven Parcel, and the McKinleyville Parcel are not in flood zones, but Trinidad Harbor is susceptible to coastal flooding.

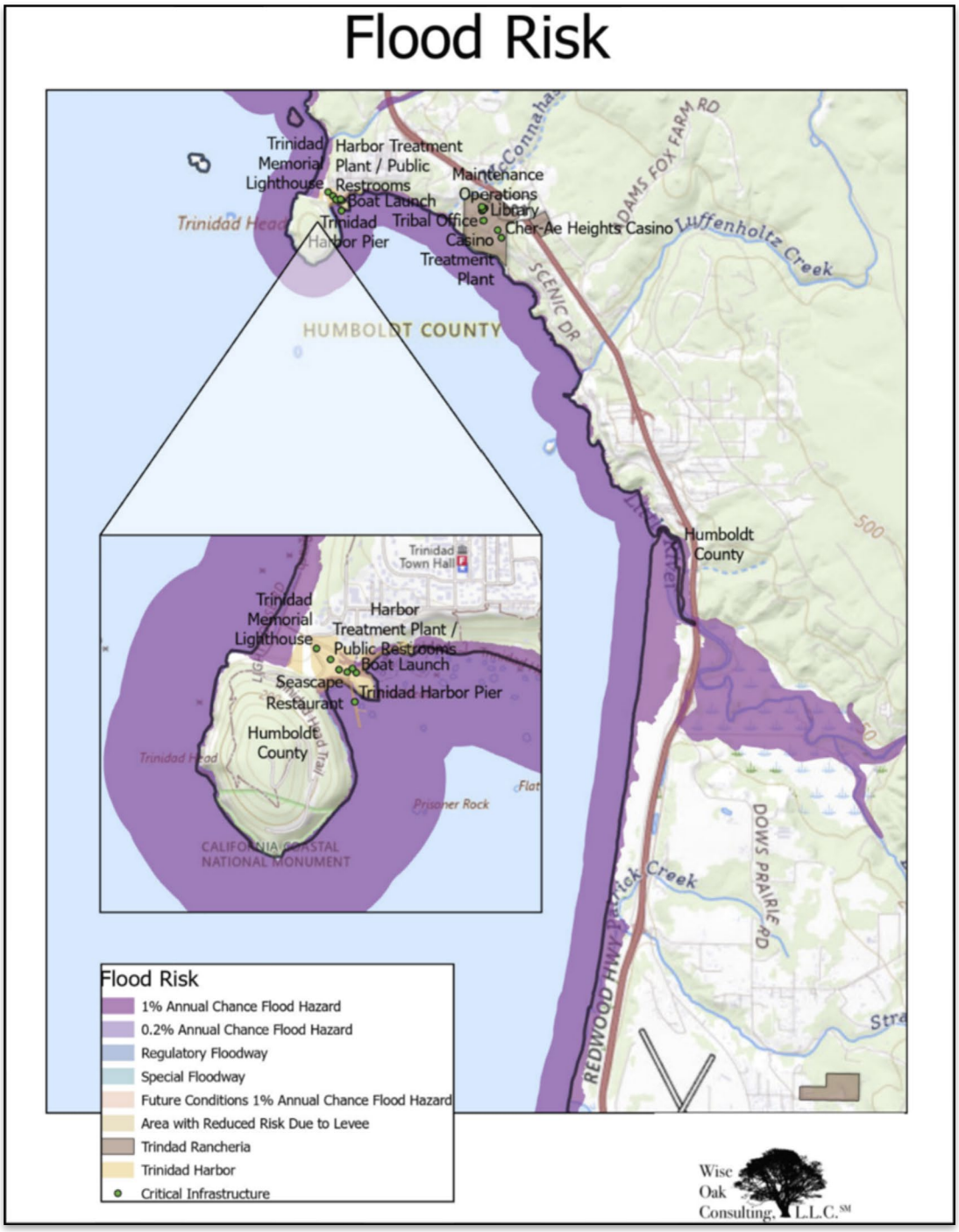


Figure 53. FEMA Flood Hazard.

Section II: Hazard Identification and Risk Assessment

Since Trinidad Rancheria is not in a flood plain, the main threat is from flash flooding in creeks and other low-lying areas. Localized flooding at streams and other low-lying road crossings impacts the Trinidad Rancheria, especially when sediment builds up in culverts. Drainage crossings along Scenic Drive (Main Parcel) are the most affected areas. The sediment build-up, in conjunction with the urban effects of the large parking lots at Tribal Operations, the casino, and at the harbor cause runoff to flow over those surfaces and have caused slides (Figures 54 - 58).

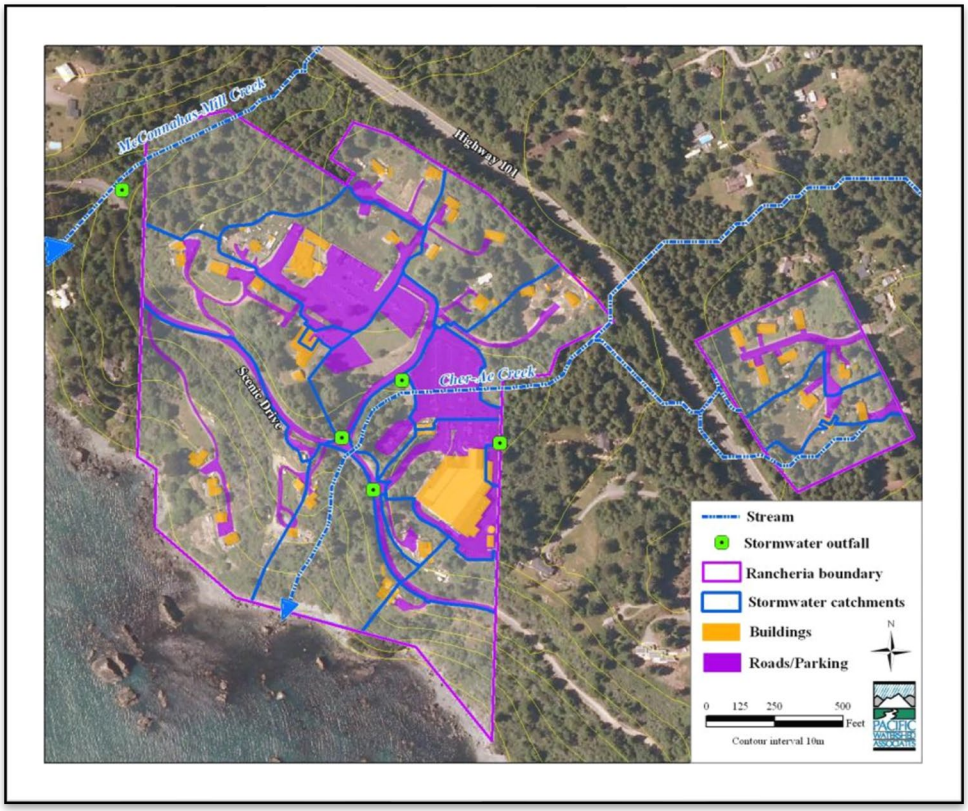


Figure 54. Trinidad Rancheria Storm Water Catchments. (Pacific Watershed Associates)

Figure 55. Typical Culvert.

Figure 56. The Heights Casino Parking Susceptibility.

Figure 57. Flood-Prone section of Archer Road. Figure 58. Duke Creek Culvert.

Trinidad Harbor facilities face damage due to flood water flowing down from the town of Trinidad over paved surfaces (Figure 59). The harbor is also at risk of flooding due to a tsunami as well as sea level rise (both discussed later).

Figure 59. Rainwater runoff at Trinidad Harbor. (Mad River Union, n.d.)

3. Extent

Direct damage will likely be constrained to road washouts. However, slides along Scenic Drive have the potential to cutoff Tribal Operations, The Heights Casino/Sunset Restaurant (the main Tribal revenue source), and 18 homes (approximately 60 people). Road washouts that cause the closing of Tribal Operations and The Heights Casino/Sunset Restaurant result in a daily loss of $3,000 in net revenue and a $6,700 per day impact on payroll.

4. Historical occurrences on Trinidad Rancheria:

Trinidad Rancheria experiences localized flooding annually – typically during the severe winter storms. Since 1953, Humboldt County has received 12 Federal Disaster Declarations due to flooding (Table 23).

Table 23. Flood Presidential Disaster Declarations in Humboldt County.

Disaster Type	Disaster Declaration*	Dates	Total FEMA Assistance ($)**
Flood	DR-183-CA	December 24, 1964	IA – unknown PA – unknown
Flood	DR-212-CA	January 22, 1966	IA – unknown

Table 23. Flood Presidential Disaster Declarations in Humboldt County.			
Disaster Type	**Disaster Declaration***	**Dates**	**Total FEMA Assistance ($)****
			PA – unknown
Flood	DR-253-CA	January 26, 1969	IA – unknown PA – unknown
Flood	DR-329-CA	April 5, 1972	IA – unknown PA – unknown
Flood	DR-412-CA	January 25, 1974	IA – unknown PA – unknown
Flood	DR-651-CA	December 19, 1981 - January 8, 1983	IA – unknown PA – unknown
Flood	DR-758-CA	February 12, 1986 - March 10, 1986	IA – unknown PA – unknown
Flood	DR-979-CA	January 5, 1993 - March 20, 1993	IA – unknown PA – unknown
Flood	DR-4308-CA	February 1, 2017 - February 23, 2017	IA – N/A PA • PA (Categories A-B): $151,794,535.62 • PA (Categories C-G): $272,635,923.77 HMGP: $15,012,050.80
Flood	DR-3591-CA	January 8, 2023 - January 31, 2023	IA – N/A PA • PA (Categories A-B): $151,794,535.62 • PA (Categories C-G): $272,635,923.77 HMGP: $15,012,050.80
Flood	EM-3591-CA	January 8, 2023 - January 31, 2023	IA – N/A PA • PA (Category A): N/A • PA (Category B): unknown • PA (Categories C-G): N/A HMGP: N/A
Flood	DR-4683-CA	Dec 27, 2022 - Jan 31, 2023	IA – N/A PA • PA (Categories A-B): $50,624,153.98 • PA (Categories C-G): $34,630,876.55 HMGP: $16,966,039.17
Flood	EM-2592-CA		IA – N/A PA • PA (Category A): N/A • PA (Category B): unknown • PA (Categories C-G): N/A HMGP: N/A

*Types of disaster declarations

- EM (Emergency Declaration): "Emergency Declarations, an incident is any instance that the President determines warrants supplemental emergency assistance to save lives and protect property and public health and safety, or to lessen or avert the threat of a catastrophe." (Federal Emergency Management Agency 2020)
- DR (Major Disaster Declaration): "For Major Disaster Declarations, an incident is any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion. Major Disaster Declarations may include a combination of incident types, such as storms and landslides." (Federal Emergency Management Agency 2020)

** Public Assistance - Dollars Obligated: Funds made available to the State/Tribe via electronic transfer following FEMA's final review and approval of Public Assistance projects.

5. Probability of Future Events on Trinidad Rancheria:

Trinidad Rancheria can expect hyper-localized flooding to occur during seasonal severe winter storms on an annual basis (discussed in a different section). In fact, Tribal Maintenance conducts regular and annual maintenance to help prevent flooding along roads, ditches, and creeks. The National Risk Index estimates 3.6 coastal flooding and .7 riverine flooding events per year.

6. Vulnerability of Trinidad Rancheria:

Trinidad Harbor is directly affected by coastal flooding, but only to a minor extent. Due to the topography of the region, it does not have major tidal swings. and there is not a river feeding Trinidad Bay. The facilities at Trinidad Harbor operations have a low risk of coastal flooding. Trinidad Rancheria has $9.57 million worth of facilities at Trinidad Harbor.

Riverine flooding is not a major threat since no rivers run through or near the reservation. The greatest risk is from creeks overflowing. The creeks of greatest concern are McConnahas Mill Creek that crosses Scenic Drive and Duke Creek that crosses Archer Road. There is also drainage under the Casino parking lot that has caused a sink hole due to erosion. The greatest vulnerability is to road wash out or flooding due to insufficient/clogged drainage. While Trinidad Rancheria manages the general maintenance of Scenic Drive within the reservation, Humboldt County is responsible for the remainer. Similarly, Trinidad Rancheria maintains the culverts under Archer Road in the Westhaven Parcel but does not have control of the road outside of the reservation.

7. Impact on Trinidad Rancheria:

Trinidad Rancheria is not considered to be in a flood zone by the National Flood Insurance Program. With only Trinidad Harbor in a flood zone, and the National Risk Index Expected Annual Loss assesses that both the coastal flooding and riverine flooding risk to be relatively low across the reservation. Direct damage will likely be constrained to road washouts. However, slides along Scenic Drive have the potential to cutoff Tribal Operations, The Heights Casino/ Sunset Restaurant (the main Tribal revenue source), and 18 homes (approximately 60 people). In addition, 55 Tribal members and 15 homes risk getting cutoff if the road is cut. This type of flooding has occurred over the parking lot along Cher-Ae Creek (Figure 55) as well as in the McKinleyville Parcel land where Archer Road crosses Duke Creek (Figure 56 and Figure 57). In addition, the sinkhole under the casino parking lot was the result of an excess of accumulated groundwater that then flooded the area. Some Tribal homes were built over old stream beds and suffer high moisture levels and flooding during severe winter storms.

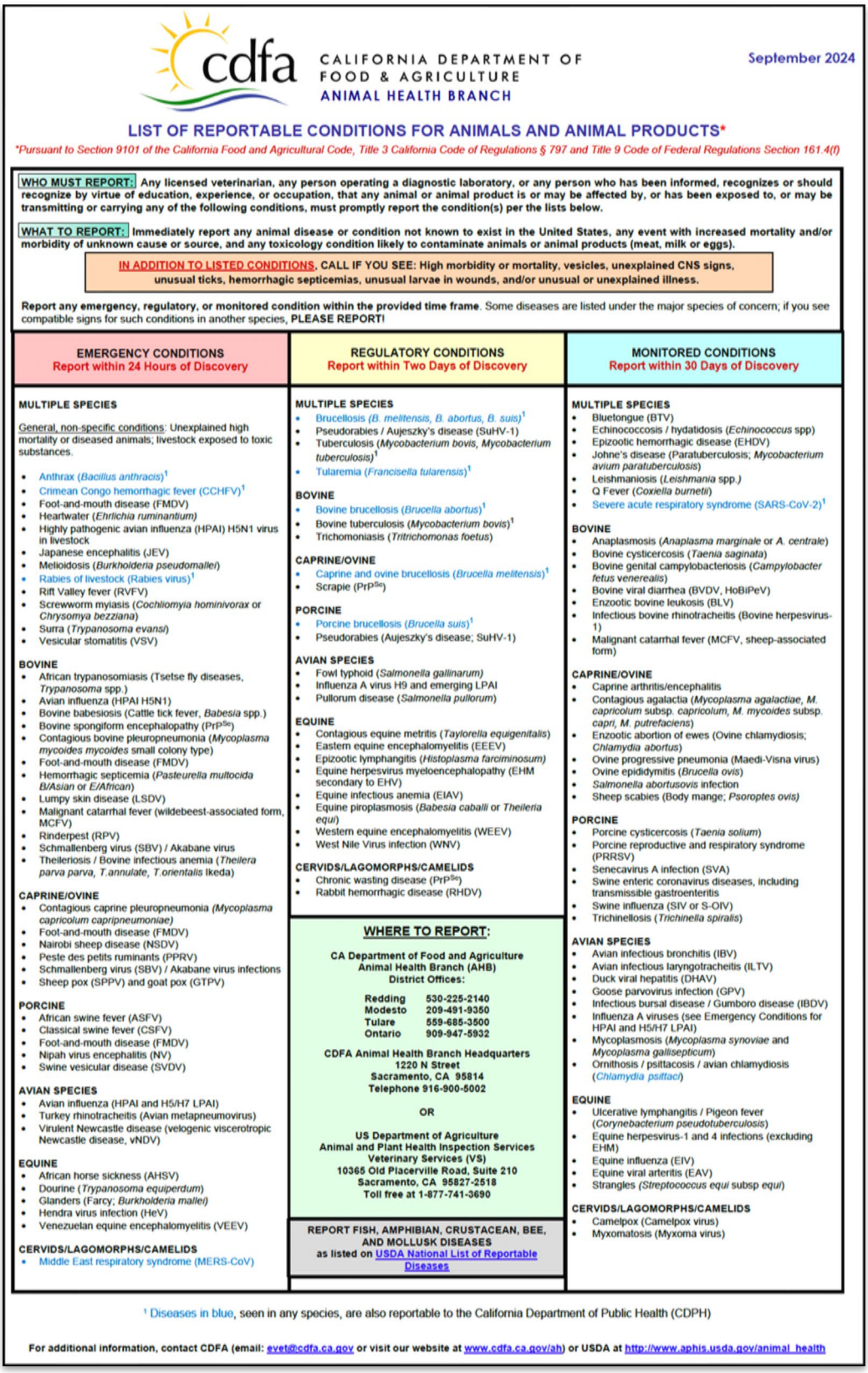
8. Impact of climate change:

Overall, the Reservation can expect to see more flooding during the winter months – which is already when the hazards have the largest regular impact. As described in Climate Change hazard profile, greater precipitation during the winter storms will likely lead to more flooding and landslides. Wetter winters will lead to greater flooding and resulting erosion during that season. Sea level rise will result in greater coastline flooding. Unfortunately, most of the hydrology models are historically based. Since climate change can render historical data obsolete, new models are needed to fully predict the impact of climate change.

7. Land Animal Disease

1. General hazard description:

Although land animal disease is a constant natural hazard in agriculture-rich California, it does not represent a significant, direct hazard to Trinidad Rancheria. While some Tribal members do practice sustenance hunting and own animals as pets, Trinidad Rancheria does not rely upon land animals for either income or as a food supply at large. Figure 60 contains the list of reportable animal diseases, "pursuant to Section 9101 of the California Food and Agriculture Code, Title 3 California Code of Regulations § 797 and Title 9 Code of Federal Regulations 161.4 (f)." (California Department of Food and Agriculture, 2024)



cdfa CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE
ANIMAL HEALTH BRANCH

September 2024

LIST OF REPORTABLE CONDITIONS FOR ANIMALS AND ANIMAL PRODUCTS*

*Pursuant to Section 9101 of the California Food and Agricultural Code, Title 3 California Code of Regulations § 797 and Title 9 Code of Federal Regulations Section 161.4(f)

WHO MUST REPORT: Any licensed veterinarian, any person operating a diagnostic laboratory, or any person who has been informed, recognizes or should recognize by virtue of education, experience, or occupation, that any animal or animal product is or may be affected by, or has been exposed to, or may be transmitting or carrying any of the following conditions, must promptly report the condition(s) per the lists below.

WHAT TO REPORT: Immediately report any animal disease or condition not known to exist in the United States, any event with increased mortality and/or morbidity of unknown cause or source, and any toxicology condition likely to contaminate animals or animal products (meat, milk or eggs).

IN ADDITION TO LISTED CONDITIONS, CALL IF YOU SEE: High morbidity or mortality, vesicles, unexplained CNS signs, unusual ticks, hemorrhagic septicemias, unusual larvae in wounds, and/or unusual or unexplained illness.

Report any emergency, regulatory, or monitored condition within the provided time frame. Some diseases are listed under the major species of concern; if you see compatible signs for such conditions in another species, **PLEASE REPORT!**

EMERGENCY CONDITIONS
Report within 24 Hours of Discovery

MULTIPLE SPECIES

General, non-specific conditions: Unexplained high mortality or diseased animals; livestock exposed to toxic substances.

- Anthrax (*Bacillus anthracis*)[1]
- Crimean Congo hemorrhagic fever (CCHFV)[1]
- Foot-and-mouth disease (FMDV)
- Heartwater (*Ehrlichia ruminantium*)
- Highly pathogenic avian influenza (HPAI) H5N1 virus in livestock
- Japanese encephalitis (JEV)
- Melioidosis (*Burkholderia pseudomallei*)
- Rabies of livestock (Rabies virus)[1]
- Rift Valley fever (RVFV)
- Screwworm myiasis (*Cochliomyia hominivorax* or *Chrysomya bezziana*)
- Surra (*Trypanosoma evansi*)
- Vesicular stomatitis (VSV)

BOVINE

- African trypanosomiasis (Tsetse fly diseases, *Trypanosoma* spp.)
- Avian influenza (HPAI H5N1)
- Bovine babesiosis (Cattle tick fever, *Babesia* spp.)
- Bovine spongiform encephalopathy (PrP^{Sc})
- Contagious bovine pleuropneumonia (*Mycoplasma mycoides mycoides* small colony type)
- Foot-and-mouth disease (FMDV)
- Hemorrhagic septicemia (*Pasteurella multocida B/Asian* or *E/African*)
- Lumpy skin disease (LSDV)
- Malignant catarrhal fever (wildebeest-associated form, MCFV)
- Rinderpest (RPV)
- Schmallenberg virus (SBV) / Akabane virus
- Theileriosis / Bovine infectious anemia (*Theilera parva parva, T.annulate, T.orientalis* Ikeda)

CAPRINE/OVINE

- Contagious caprine pleuropneumonia *(Mycoplasma capricolum capripneumoniae)*
- Foot-and-mouth disease (FMDV)
- Nairobi sheep disease (NSDV)
- Peste des petits ruminants (PPRV)
- Schmallenberg virus (SBV) / Akabane virus infections
- Sheep pox (SPPV) and goat pox (GTPV)

PORCINE

- African swine fever (ASFV)
- Classical swine fever (CSFV)
- Foot-and-mouth disease (FMDV)
- Nipah virus encephalitis (NV)
- Swine vesicular disease (SVDV)

AVIAN SPECIES

- Avian influenza (HPAI and H5/H7 LPAI)
- Turkey rhinotracheitis (Avian metapneumovirus)
- Virulent Newcastle disease (velogenic viscerotropic Newcastle disease, vNDV)

EQUINE

- African horse sickness (AHSV)
- Dourine (*Trypanosoma equiperdum*)
- Glanders (Farcy; *Burkholderia mallei*)
- Hendra virus infection (HeV)
- Venezuelan equine encephalomyelitis (VEEV)

CERVIDS/LAGOMORPHS/CAMELIDS

- Middle East respiratory syndrome (MERS-CoV)

REGULATORY CONDITIONS
Report within Two Days of Discovery

MULTIPLE SPECIES

- Brucellosis (*B. melitensis, B. abortus, B. suis*)[1]
- Pseudorabies / Aujeszky's disease (SuHV-1)
- Tuberculosis (*Mycobacterium bovis, Mycobacterium tuberculosis*)[1]
- Tularemia (*Francisella tularensis*)[1]

BOVINE

- Bovine brucellosis (*Brucella abortus*)[1]
- Bovine tuberculosis (*Mycobacterium bovis*)[1]
- Trichomoniasis (*Tritrichomonas foetus*)

CAPRINE/OVINE

- Caprine and ovine brucellosis (*Brucella melitensis*)[1]
- Scrapie (PrP^{Sc})

PORCINE

- Porcine brucellosis (*Brucella suis*)[1]
- Pseudorabies (Aujeszky's disease; SuHV-1)

AVIAN SPECIES

- Fowl typhoid (*Salmonella gallinarum*)
- Influenza A virus H9 and emerging LPAI
- Pullorum disease (*Salmonella pullorum*)

EQUINE

- Contagious equine metritis (*Taylorella equigenitalis*)
- Eastern equine encephalomyelitis (EEEV)
- Epizootic lymphangitis (*Histoplasma farciminosum*)
- Equine herpesvirus myeloencephalopathy (EHM secondary to EHV)
- Equine infectious anemia (EIAV)
- Equine piroplasmosis (*Babesia caballi* or *Theileria equi*)
- Western equine encephalomyelitis (WEEV)
- West Nile Virus infection (WNV)

CERVIDS/LAGOMORPHS/CAMELIDS

- Chronic wasting disease (PrP^{Sc})
- Rabbit hemorrhagic disease (RHDV)

WHERE TO REPORT:

CA Department of Food and Agriculture
Animal Health Branch (AHB)
District Offices:

Redding	530-225-2140
Modesto	209-491-9350
Tulare	559-685-3500
Ontario	909-947-5932

CDFA Animal Health Branch Headquarters
1220 N Street
Sacramento, CA 95814
Telephone 916-900-5002

OR

US Department of Agriculture
Animal and Plant Health Inspection Services
Veterinary Services (VS)
10365 Old Placerville Road, Suite 210
Sacramento, CA 95827-2518
Toll free at 1-877-741-3690

REPORT FISH, AMPHIBIAN, CRUSTACEAN, BEE, AND MOLLUSK DISEASES
as listed on USDA National List of Reportable Diseases

MONITORED CONDITIONS
Report within 30 Days of Discovery

MULTIPLE SPECIES

- Bluetongue (BTV)
- Echinococcosis / hydatidosis (*Echinococcus* spp)
- Epizootic hemorrhagic disease (EHDV)
- Johne's disease (Paratuberculosis; *Mycobacterium avium paratuberculosis*)
- Leishmaniosis (*Leishmania* spp.)
- Q Fever (*Coxiella burnetii*)
- Severe acute respiratory syndrome (SARS-CoV-2)[1]

BOVINE

- Anaplasmosis (*Anaplasma marginale* or *A. centrale*)
- Bovine cysticercosis (*Taenia saginata*)
- Bovine genital campylobacteriosis (*Campylobacter fetus venerealis*)
- Bovine viral diarrhea (BVDV, HoBiPeV)
- Enzootic bovine leukosis (BLV)
- Infectious bovine rhinotracheitis (Bovine herpesvirus-1)
- Malignant catarrhal fever (MCFV, sheep-associated form)

CAPRINE/OVINE

- Caprine arthritis/encephalitis
- Contagious agalactia (*Mycoplasma agalactiae, M. capricolum* subsp. *capricolum, M. mycoides* subsp. *capri, M. putrefaciens*)
- Enzootic abortion of ewes (Ovine chlamydiosis; *Chlamydia abortus*)
- Ovine progressive pneumonia (Maedi-Visna virus)
- Ovine epididymitis (*Brucella ovis*)
- *Salmonella abortusovis* infection
- Sheep scabies (Body mange; *Psoroptes ovis)*

PORCINE

- Porcine cysticercosis (*Taenia solium*)
- Porcine reproductive and respiratory syndrome (PRRSV)
- Senecavirus A infection (SVA)
- Swine enteric coronavirus diseases, including transmissible gastroenteritis
- Swine influenza (SIV or S-OIV)
- Trichinellosis (*Trichinella spiralis*)

AVIAN SPECIES

- Avian infectious bronchitis (IBV)
- Avian infectious laryngotracheitis (ILTV)
- Duck viral hepatitis (DHAV)
- Goose parvovirus infection (GPV)
- Infectious bursal disease / Gumboro disease (IBDV)
- Influenza A viruses (see Emergency Conditions for HPAI and H5/H7 LPAI)
- Mycoplasmosis (*Mycoplasma synoviae* and *Mycoplasma gallisepticum*)
- Ornithosis / psittacosis / avian chlamydiosis (*Chlamydia psittaci*)

EQUINE

- Ulcerative lymphangitis / Pigeon fever (*Corynebacterium pseudotuberculosis*)
- Equine herpesvirus-1 and 4 infections (excluding EHM)
- Equine influenza (EIV)
- Equine viral arteritis (EAV)
- Strangles (*Streptococcus equi* subsp *equi*)

CERVIDS/LAGOMORPHS/CAMELIDS

- Camelpox (Camelpox virus)
- Myxomatosis (Myxoma virus)

[1] Diseases in blue, seen in any species, are also reportable to the California Department of Public Health (CDPH)

For additional information, contact CDFA (email: evet@cdfa.ca.gov or visit our website at www.cdfa.ca.gov/ah) or USDA at http://www.aphis.usda.gov/animal_health

Figure 60. Reportable Conditions for Animals and Animal Products.

2. **Location:**

While all of the Rancheria properties are at risk for exposure, only those Tribal members who conduct sustenance hunting will be directly affected. Livestock are not allowed on Tribal property. Tribal members could be affected if disease is spread to pets or via other vectors.

3. **Extent:**

Trinidad Rancheria does not engage in agriculture. Therefore, the major impact will be the introduction of disease from wildlife to pets and even humans.

4. **Historical occurrences on Trinidad Rancheria:**

The latest significant land animal outbreak in Humboldt County was an avian cholera outbreak from November 25th, 1975, until February 17th, 1976. In 2017, Humboldt County had its first case of West Nile Virus in 4 years. On June 13th, 2018, a crow was found to carry West Nile Virus but outbreak did not ensue. (Stansberry, 2018)

5. **Probability of Future Events on Trinidad Rancheria:**

From communicable to vector borne diseases, land animal diseases are a certainty across California and Humboldt County.

6. **Vulnerability of Trinidad Rancheria:**

While land animal disease will be a continual hazard in California, to the lack of agriculture on the Rancheria as well as the small footprint, leaves the Rancheria minimally exposed.

7. **Impact on Trinidad Rancheria:**

While the vector-borne diseases that Humboldt County tracks are serious, they do not present a significant risk to Trinidad Rancheria, its members, and its assets. Trinidad Rancheria is more likely to suffer indirect impacts from major livestock or poultry outbreaks elsewhere that affect the supply chain for both the Tribe's restaurants and members.

8. **Impact of Climate Change:**

Vectors, pathogens, and hosts each survive and reproduce within a range of optimal climatic conditions: temperature and precipitation are the most important, while sea level elevation, wind, and daylight duration are also important. Specifically, the WHO has recorded a five-fold increase in malaria epidemic risk the year after El Nino events. Because moisture and temperature are such significant factors, elevated temperatures and extreme rain events resulting from climate change increase the risk. WHO models have shown that climate change increases the transmission of malaria and dengue fever worldwide, and encephalitis in the U.S.

Vectors, pathogens and hosts each survive and reproduce within a range of optimal climatic conditions: temperature and precipitation being most important, while sea level elevation, wind and daylight duration are also important. Climate changes may affect important determinants of vector-borne disease transmission including vector survival and reproduction, (the vector's biting rate, and the pathogen's incubation rate within the vector organism.

Droughts can increase the dissemination of arboviral diseases in urban areas by allowing a boost in the population of mosquitoes in foul water when they gather in catch basins to breed. Furthermore, eggs can be vertically infected with arboviruses and heat waves speed up the maturation of the mosquitoes and of the viruses within mosquitoes. Droughts also cause a decline in mosquito predators like frogs, darning needles, and dragonflies. In addition, birds congregate around shrinking water sites, enhancing circulation of viruses among birds and mosquitoes. In conclusion, the seriousness of some of the recent epidemics like West Nile virus and Dengue appear to have been influenced by climate change. As most of the arboviral infections are asymptomatic in humans, there is an increased opportunity for blood, organ, and tissue donations by infected individuals during the viremic period, resulting in an increased risk of transmission of arboviruses.

8. Landslide

1. General hazard description:

Landslides, especially caused by severe winter storms (discussed in a separate section), are the Rancheria's greatest concern for damage to infrastructure.

Landslide Categories

Landslides are generally categorized as shallow or deep-seated and this difference can determine their speed and size. Of most significance to the Reservation are shallow landslides that typically occur during the winter months in western California (they are possible at any time). Deep-seated landslides can also occur at any time. Many of the landslide areas in California are a mixture of different slide types.

Shallow Landslides Categories

Shallow landslides, often call mudslides, are rooted in the soil layer and often form slumps along roadways or fast-moving debris flows down valleys. Shallow landslides also occur as flows, slides, or rockfalls and topples.

Deep-seated Landslides

Deep-seated landslides fail below the rooting depth of trees and vegetation. They are often slow moving but can also move rapidly. Deep-seated landslides can cover large areas and devastate infrastructure and housing developments. These landslides usually occur as translational slides, rotational slides, or large block slides. Deep-seated landslides are typically much larger than shallow landslides, in terms of both surface area and volume. A deep-seated landslide may appear stable for years, decades, or even centuries. These long-lived features can be partially or entirely reactivated for a variety of reasons.

Landslide Types

Landslides can occur as flows, slides, or rockfalls and topples. Although there are a number of triggers such as earthquakes and storms, two factors that affect the possibility of landslides are slope and water. As slopes get steeper, the force of gravity overcomes friction and slides occur. Water both reduces friction and adds weight (increased force of gravity) and causes slides. A major difference between the three types of slides is the amount of water—flows have the most and rockfalls usually have the least.

Flows

Flows are what their name implies - generally a slurry mixture of water, soil, rock and (or) debris that moves rapidly downslope. Types of flows include (Figure 61):

- **Earthflows** have a characteristic 'hourglass' shape. The slope material liquefies and runs out, forming a bowl or depression at the head. Flows usually occur in fine-grained material on moderate, water-saturated slopes.
- **Debris flows** usually occur in steep gullies and contain more coarse material than a mud- flow. They move very rapidly and can travel for many miles. Slopes where vegetation has been removed by fire or humans are at greater risk for debris flows.
- **Debris avalanches** are unchannelized debris flows that move very rapidly. They typically do not mobilize far and sometimes move like a snow avalanche.
- **Lateral spreads** occur on very low-angle slopes toward a free face such as a cliff or embankment. Movement is accompanied by cracking of the ground. Failure is caused by liquefaction (when soil is transformed from a solid to a liquid), usually because of an earthquake.

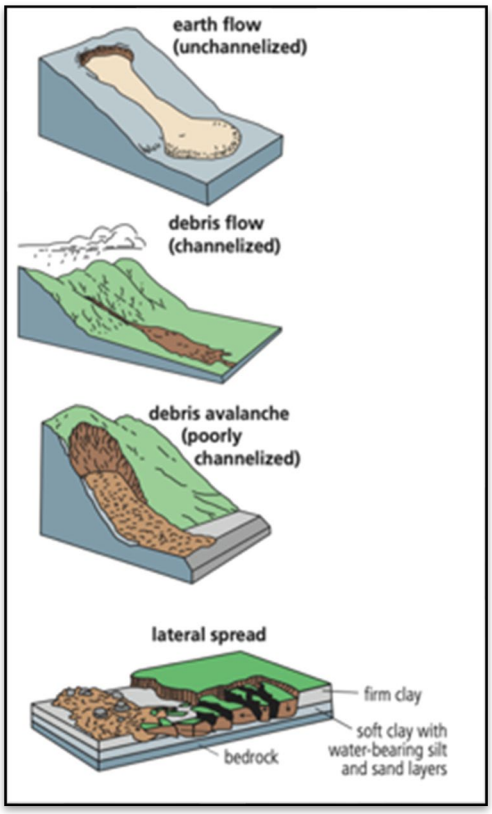


Figure 61. Types of Flows.

- **Lahars** are debris flows that originate on volcanoes. A volcanic eruption can rapidly melt snow and ice, causing a deluge of rock, soil, ash, and water that accelerates down the slopes of a volcano, devastating anything in its path. They can travel great distances and damage structures in flat areas far from their source. Communities near rivers draining Mount Rainier and Glacier Peak are at greatest risk.
- **Soil creep** is the very slow (inches/year), steady, downward movement of soil or rock. Creep is indicated by curved tree trunks, bent fences or retaining walls, tilted poles or fences, and small soil ripples or ridges.

Rockfalls and Topples

Rockfalls and topples are common in California's mountain passes and are large pieces of rock rapidly fallen down a slope (Figure 62). They can cover roads and bury streams.

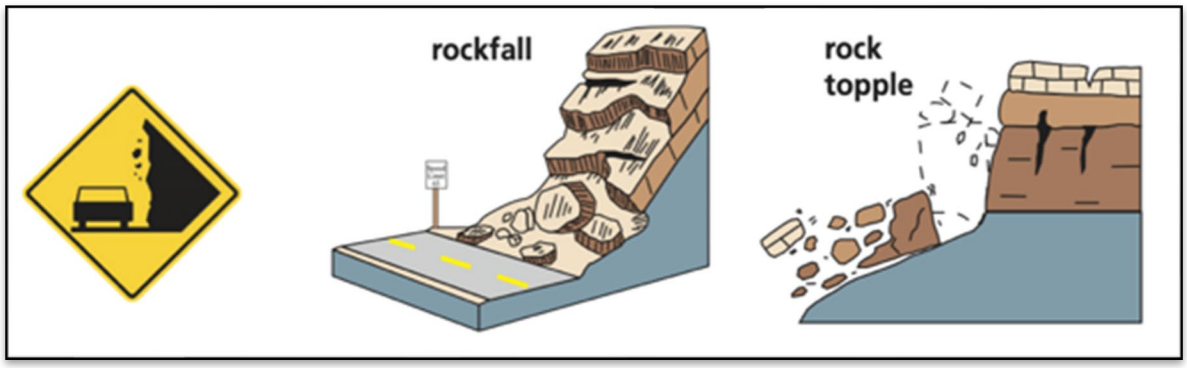


Figure 62. Rockfalls and Topples.

Slides

Slides are the downslope movements of soil or rock along a surface and can be deep-seated or shallow. The initiation of slides, like flows or rockfalls, is sensitive to steep slopes, the additional weight of water or other loads, and friction along their base. Types of slides include:

- **Translational slides** usually fail along geo- logic discontinuities such as faults, joints, bedding surfaces, or the contact between two rock types. They move out or down along a planar surface with little tilting and can travel great distances. Translational slides can contain loose sediments or large slabs of bedrock.
- **Rotational slides (slumps)** are landslides that occur along a curved or spoon-shaped surface. Back- tilting may occur near the scarp of the landslide, and there is often a toe of displaced material. Rotational slides often occur because the internal strength of the material is overcome by its own weight. They. are usually composed of relatively loose or unconsolidated material.
- **Block slides** are a particular type of translational slide that occur when large and relatively intact slabs of rock or earth are rapidly transported downslope. These types of landslides can be large and damaging; they occur in locations in which alternating layers of strong and weak rock slope downhill.

2. Location:

"On the most basic level, weak rocks and steep slopes are more likely to generate landslides." (C. J. Wills, 2011) Overall, Trinidad Rancheria faces a landslide risk due to

triggering events such as heavy rainfall and earthquakes. As described in the Planning Area section, the Main Parcel overlays steep slopes and loose soil. Due to the steep terrain, makeup of the rocks, high rainfall, and earthquake potential, "…the convergence of factors suggests higher landslide potential in the northern Coast Ranges than in other regions of the state." (C. J. Wills, 2011) Figure 63 clearly depicts that all sections of the Rancheria are susceptible to landslides.

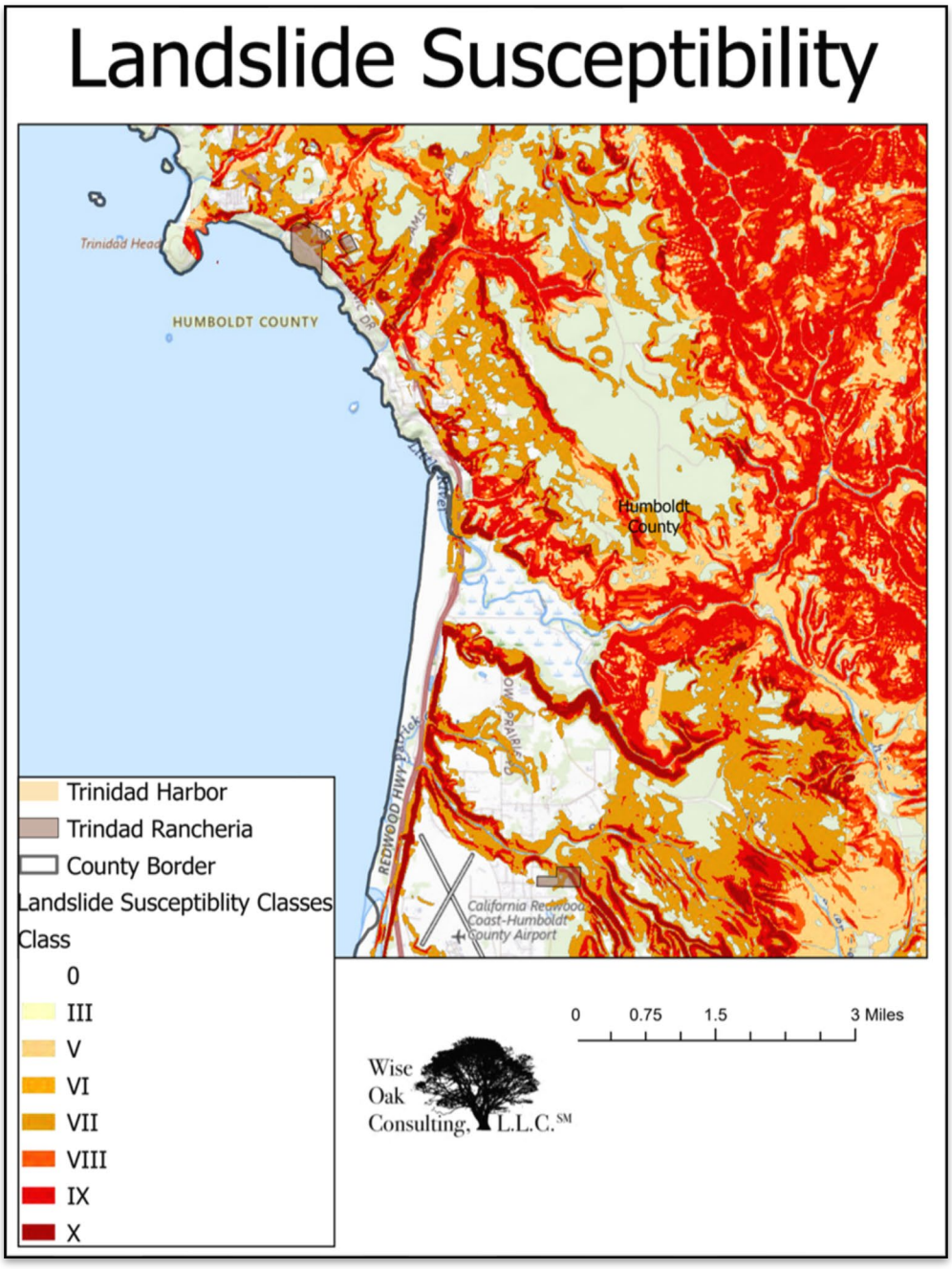
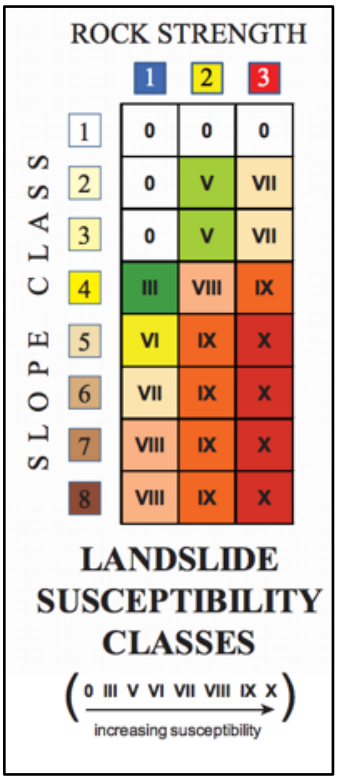


Figure 63. Landslide Susceptibility.

3. **Extent:**



Corresponding with Figure 63, Figure 64 suggests that Trinidad Rancheria's risk is approximately VII-IX based on Landslide Susceptibility Classes. Essentially, every segment of the Rancheria has the highest level of classified landslide susceptibility.

Figure 64. Landslide Susceptibility Classes.

4. **Previous Occurrences on Trinidad Rancheria:**

While California in general, and Humboldt County specifically, have suffered mudslides and landslides, they have been a result of other weather phenomena. Therefore, FEMA does not have any Federally declared disasters strictly for these events. Trinidad Rancheria can expect to be affected by landslides both directly and indirectly. In 2017, Caltrans estimated that a slide on Highway-101 north of Legget, CA, cost Humboldt County's economy, "…millions of dollars per day in tourism, fuel, and transportation costs." (Anderson, 2017) Trinidad Rancheria faces a direct risk due to the Scenic Drive's susceptibility to slides.

The Main Parcel is highly susceptible to landslides. Most significantly, Scenic Drive provides the only access to the Trinidad Rancheria, nearby properties, and coastal recreational areas. Scenic Drive is used by residents at the Rancheria, patrons of the Rancheria's businesses, area residents outside of the Rancheria, tourists, and local visitors. The concept behind improving access to the Rancheria is to also provide benefits to all who use the transportation routes that serve the area. Scenic Drive has existed along its present alignment for many decades and was the main corridor through the area prior to the construction of Highway-101. However, Scenic

Drive has been unstable and has been closed many times for repairs. The unstable nature of Scenic Drive and the limitations on the increasing capacity in part led to the building of Highway-101 inland. In recent years, Scenic Drive has shown itself to be very unstable. Minimal maintenance of this road due to budget constraints coupled with geologic instability has led to a steady deterioration of its condition.

A map of Scenic Drive noting the locations of significant road repairs is presented in Figure 65. As can be seen in Figure 65, there are numerous locations along Scenic Drive where significant road failures have occurred. Figure 666 shows corresponding locations of significant slide areas that threaten Scenic drive. These slides have closed one or both lanes for weeks and months at a time. Since significant slides and road closures have occurred, both north and south of the Rancheria, it is possible that slides and road closures could occur in both directions, thereby cutting these areas off from road access. Much of the coastal bluffs are unstable and there is no one area that could be addressed to solve all the impaired access problems that have been encountered on Scenic Drive. Some of the more significant events are discussed in the following section.

Trinidad Rancheria also suffered a subsidence event due to severe winter storms. On Dec. 30, 2005, during a disaster declaration period a “Sink Hole” developed in the parking lot of the Casino, which is listed as a critical facility, showing the effects of heavy rainfall mixed with the instability of the land.

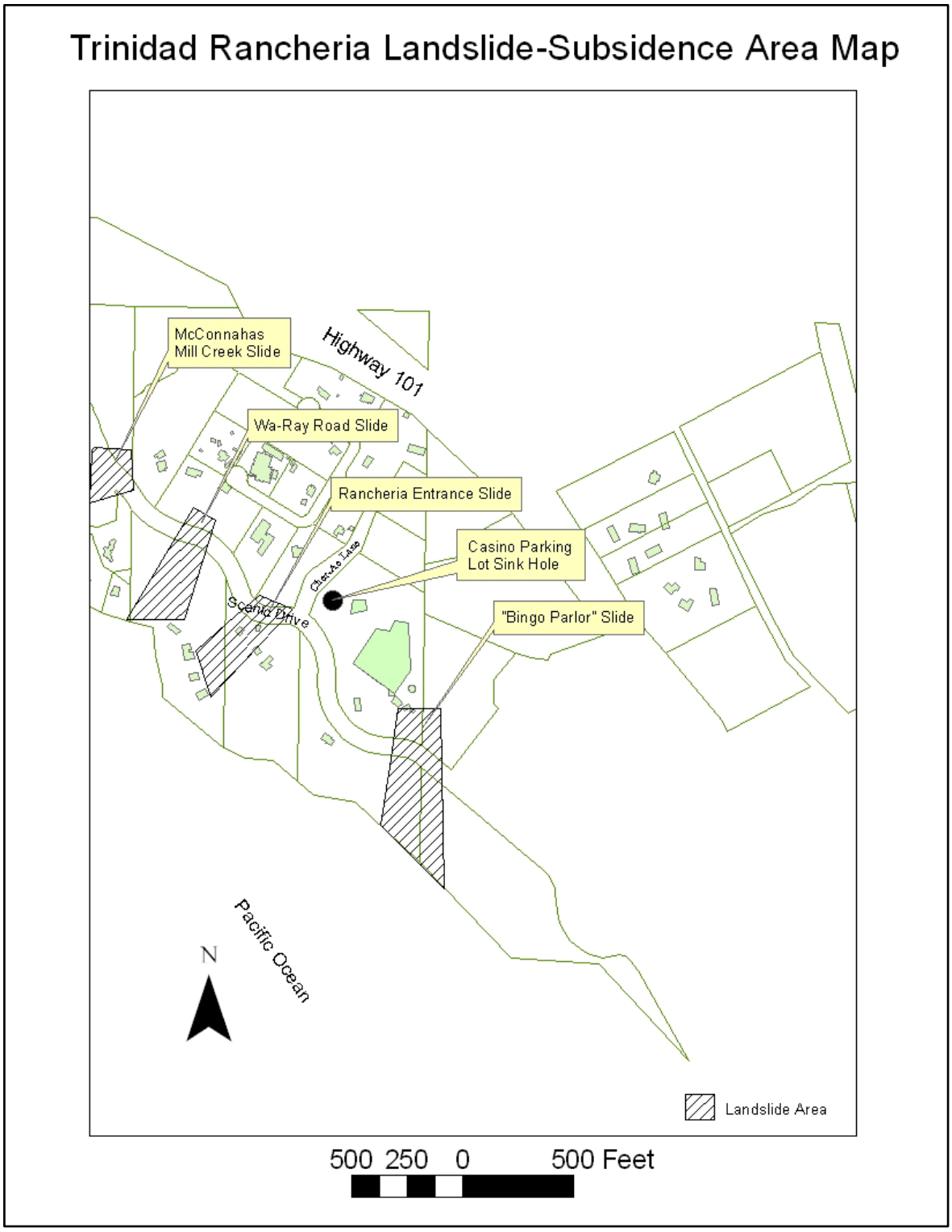


Figure 65. Trinidad Rancheria Landslide-Subsidence Area Map.

Figure 66 depicts locations of previous slides along Scenic Drive.

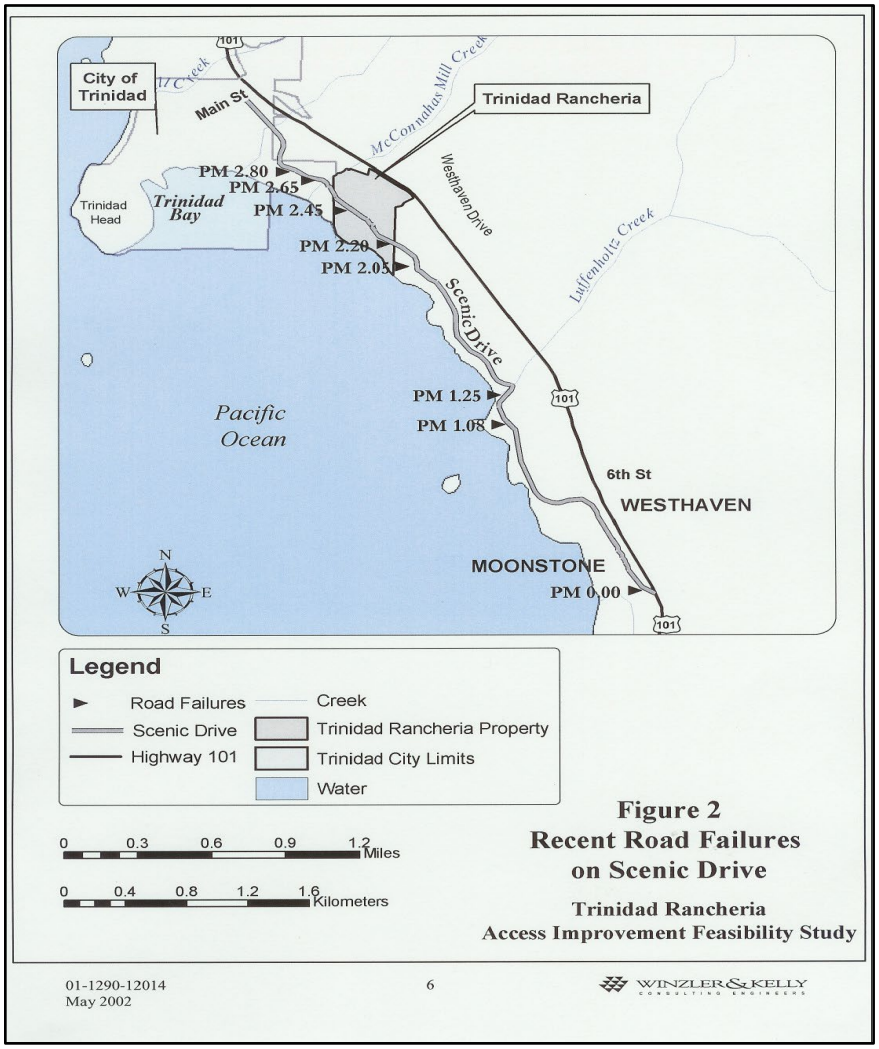


Figure 66. Scenic Drive Road Failures.

5. Probability of Future Events on Trinidad Rancheria:

Since the California Department of Conservation does not currently have a published landslide inventory that covers Trinidad Rancheria, further analysis is needed to more accurately define the landslide risk to Trinidad Rancheria. (California Department of Conservation, 2024)

However, past slides are an indicator for potential future slides. As such, Scenic Drive, including the houses and land above and below it, as well as Cher-Ae Lane, can be assumed to be hazard areas due to previous slide events. The historical Mill Creek, Wa-Ray Road, Rancheria entrance, and "Bingo Parlor" slide areas portend future slides in the same areas (Figure 64). The National Risk Index estimates 0.4 landslide events per year.

6. Vulnerability of Trinidad Rancheria:

Trinidad Rancheria is vulnerable to slides on all of its parcels. Several areas have only a single road access. The most significant vulnerabilities are as follows:

- The Main Parcel
    - Slides that cut Scenic Drive cut all access to the Main Parcel.
    - Slides below homes or facilities lead to total losses of those buildings.
- Trinidad Harbor
    - Slides that cut the road to Trinidad Head cut all access to Trinidad Head.
    - Slides below Seascape house led to a total loss.
- McKinleyville – Slides that cut Archer Road cut off residents beyond the cut.

Figure 67 depicts a challenge for mitigating the impact of landslides on the Main Parcel. While Trinidad Rancherias Maintenance crews conduct routine mitigation actions like culvert cleaning, multiple external jurisdictions have responsibility for the maintenance.

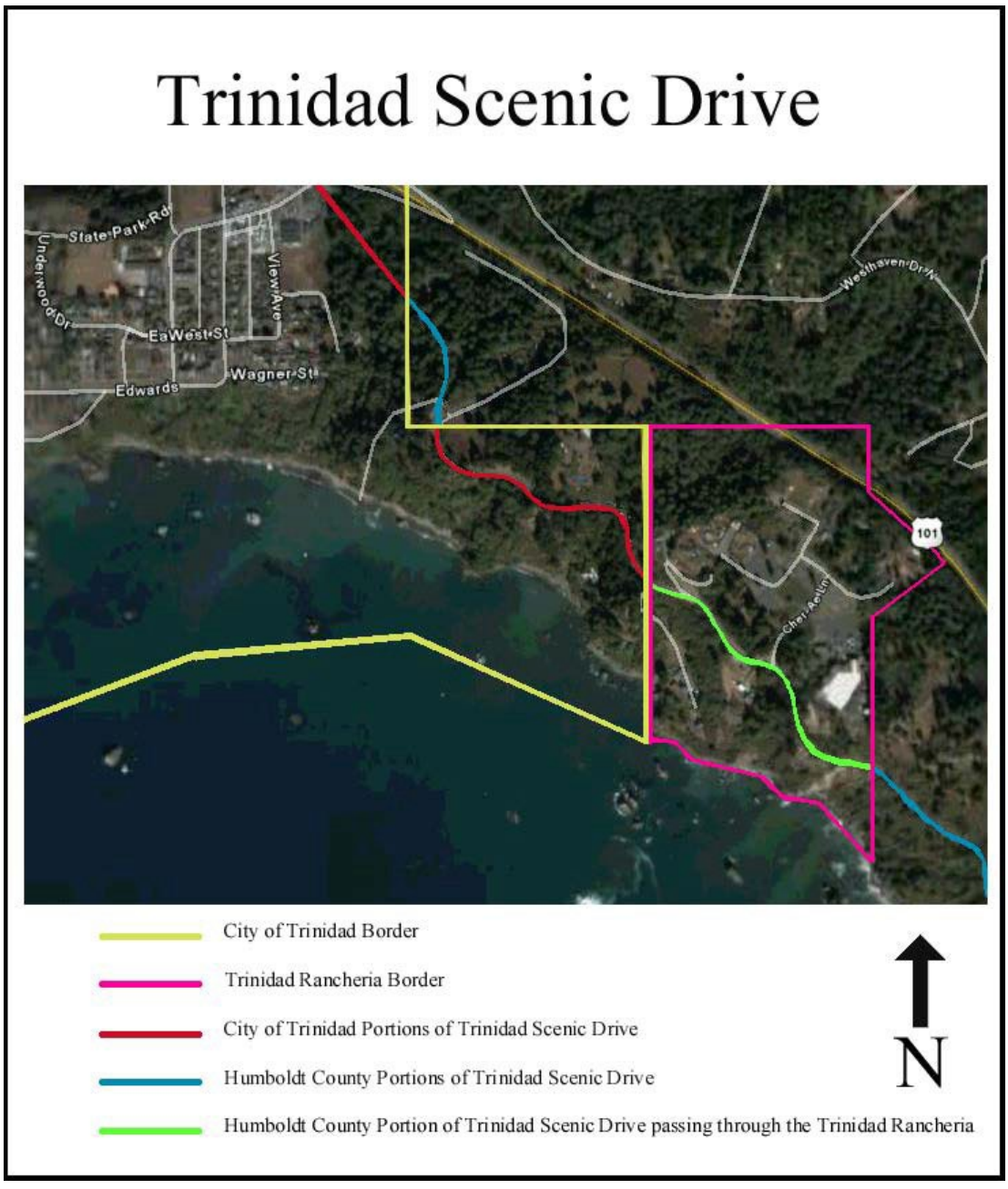


Figure 67. Responsibility for Scenic Drive Maintenance.

In April 1992, a preliminary geotechnical report evaluated and proposed remediation measures for a slope failure at Post Mile (PM) 2.05 on Scenic Drive (Figure 65). However, no action was taken at that time due to cost and technical difficulty. In 1994 at PM 1.25 near Luffenholtz Beach, a downslope slip out took out 10 ft of the 20 ft wide section of road, reducing the road to

one-way traffic. A repair was then made to re-establish the roadway to pre-disaster width. In 1994 and again in 1999, major damage occurred at PM 2.65. There has been an extensive record of damage to PM 2.8 with major damage occurring in 1995 and 2000. In February 1996, a slip out at PM 2.45 located just north of the Trinidad Rancheria entrance was very active and difficult to maintain through the winter months. A 100-ft section of road failed across the entire width. Following the heavy storm damage period, the slide was so unstable that the road had to remain closed until June. The County added rock and asphalt to maintain one-lane service. In January 1998 repairs had to be made to PM 2.2 when storm damage caused a slide/slip out. In the winter of 1999, there were losses of sections of roadway pavement, shoulder, and the supporting embankment at PM 1.08.

In summary, slides along Scenic Drive represent the greatest direct hazard for Trinidad Rancheria.

7. Impact on Trinidad Rancheria:

At the lesser end of effects, a Cher-Ae Lane slide can cause a short-term loss of access to both Tribal Operations and The Heights Casino/Sunset Restaurant. Slide areas along Scenic Drive both north and south of Cher-Ae Lane can cause longer, and more complete isolation of the Main Parcel. In addition to road damage, slides above and below Scenic drive could damage or destroy the 18 homes on the hillside.

Landslides threaten direct damage on Scenic Drive and the tribal homes along the road, Cher-Ae Lane, property on the ocean side of the casino, and the Seascape House at the harbor. The direct impact of a slide that cuts off Tribal Operations and The Heights Casino/Sunset Restaurant is $3,000 per day in lost net revenue and approximately $6,700 per day in payroll.

The area of erosion on the ocean side of the casino could suffer a major slide resulting in the loss of the propane storage and threatening the water treatment facility.

The estimated economic impact due to revenue loss over 30 days of closure is approximately $90,000 ($3,000/day). Approximately $10.87M in buildings are at risk between houses, Tribal Operations, and Seascape House.

8. Impact of Climate Change:

Climate change causes both short-term and long-term effects with respect to landslides. In the short-to-mid-term, climate change causes more extreme weather events. Since Trinidad Rancheria's main flooding hazard is due to extreme weather events, the Tribe can expect to face more frequent and more extreme storms that can trigger landslides. In the long term, climate

change (including sea level rise) will cause greater coastal erosion. The erosion along Scenic Drive will result in an increase of landslide susceptibility.

Climate change has resulted in warmer temperatures and higher snow levels in the western U.S. As a result, more precipitation is expected to fall as rain, leading to higher occurrences of ground saturation and increased runoff in areas susceptible to landslides and debris flows and consequently leads to a higher probability of landslide failure. Greater precipitation during the winter storms will likely lead to more flooding and landslides. The expected decrease in summer precipitation (along with increased temperatures) will lead to a decrease in stream flow and increase in wildfire risk. The loss of groundwater and stream water in the warmer months will affect agriculture and aquaculture enterprises.

Further, droughts induced by climate change can decrease vegetation that helps anchor soils/deposits to a hillside. This coupled with potentially more intense rainstorms can dramatically increase the probability of slope failure and lead to landslides in places where they have not previously occurred.

As described throughout this section, the increased temperature, decreased precipitation, streamflow, and ground moisture, along with the relocation to a forested region, will increase the Tribe's vulnerability to wildfire. As with vegetation loss to drought, the burn scars left by wildfire increase probability of slope failure and lead to landslides in places where they have not previously occurred.

9. Marine Animal Disease

1. General hazard description:

In recent years, the Northern California Coast has faced several marine animal diseases that threaten the ecosystem at large. Beginning in 2013, sea star wasting disease broke out and claimed 81% of the ochre sea star population along a 100-mile stretch of coast north of San Francisco. (Alvarez, 2018) In 2015, divers first noticed abalone populations declining and starving abalone falling off rocks. By 2017, 25% of 6,000 observed abalone were wasted with hunger. (Wear, 2018) As a result, the California State Fish and Game Commission shut down the 2018 recreational season. In addition to the impact on the animals, the loss of the season cost the coastal communities $26 million in economic activity. (Wear, 2018) In 2018, North Coast Sea Lions suffered an outbreak of Leptospirosis (affects the kidneys, causes weight loss, and pneumonia) that is contagious for both dogs and humans. The 2015 - 2016 harmful algae outbreak that produced high levels of domoic acid in fish and shellfish led to the delayed opening of the 2015 - 2016 Dungeness Crab Season and an estimated loss of more than $20 million. (Callahan, 2018) Domoic Acid is a neurotoxin that affects the brain and can cause seizures and possibly death. Domoic Acid has continued to plague Dungeness Crabs and at the writing of this Plan, the 2024 season is delayed in some portions of Northern California due to the neurotoxin. (California Department of Fish and Wildlife, 2024)

2. Location:

The Main Parcel's western border is coastline, and the Trinidad Harbor enterprise covers Trinidad Bay. With Trinidad Harbor going into Trust on May 1, 2024, the Rancheria's responsibility for the waters of Trinidad Harbor was increased. Rancheria Tribal elders relate memories of subsistence gathering and prayer activities along the coastline from the Luffenholtz Beach area to the Trinidad Harbor and beyond. Subsistence fishing for crab, salmon, surf fish (smelt), mussels, and clams occurred regularly from the rocky beaches within the Rancheria's borders. Families would set up fish camps during the dry months and would harvest and dry these important resources. Furthermore, the impact will be felt across the full breadth of the 700 square miles of the Indigenous Marine Stewardship Area (IMSA). Figure 68 depicts the full range of the IMSA.

Figure 68. Trinidad Rancheria Indigenous Marine Stewardship Area (IMSA).

3. Extent:

At the low end of impact, a delayed crabbing season can lead to less revenue. At the mid-to-high end, the loss of a crabbing season represents approximately $400,000 in lost revenue and $2,600 per day in payroll. At the high end, the total collapse of a marine animal population can end fishing and crabbing for many years – threatening the very viability of pier and boat launch operations. In addition, the loss of sea life is a threat to cultural resources and many traditional activities.

4. Previous Occurrences on Trinidad Rancheria:

In 2016, due to increased temperatures in the Pacific Ocean, the Trinidad Rancheria was unable to allow local subsistence, recreational, and commercial crabbing because of the presence of Domoic Acid in the crab and other shellfish tested. The Tribe relies heavily on the money generated from crabbing and fishing and the presence of domoic acid prevents the Tribe from selling any crab caught as well as prevented other fisherman from using the Trinidad Harbor to subsistence or sport fish. The Tribe lost approximately $350,000 for loss of docking and unloading fees alone during the 2016 event. Trinidad Rancheria lost additional revenue due to the resulting decrease in patronage in the Seascape Restaurant.

5. Probability of Future Events on Trinidad Rancheria:

As with human pandemics, future marine animal diseases are a certainty. As of 2024, Dungeness Crab season has been delayed for the seventh (7^{th}) year in a row. (Hunt, 2024) While some of the delayed openings were to lessen the impact on humpback whales, Domoic Acid blooms are happening more often.

Climate change has a significant impact on marine animal disease. First, the changing conditions result in new diseases to the region. While it is difficult to predict the exact weather each season, the overall trend of climate change continuing unabated will lead to sea level rise, warming oceans, increased acidity. Secondly, as conditions change, invasive species also introduce new diseases.

6. Vulnerability of Trinidad Rancheria:

In general, marine animal diseases do not pass directly to humans in the wild. However, the Rancheria is vulnerable to the indirect impacts such as Domoic Acid making shellfish unsafe to eat. In addition, marine animal disease can lead to a loss of revenue from both private and commercial fishermen and crabbers. With Trinidad Harbor being the largest source of non-gaming revenue, financial vulnerability is significant.

The Trinidad Harbor provides cultural resources and beneficial uses to this marine-dependent community and is central to the cultural and economic life of the community. Trinidad Bay and the nearby coastal areas provide recreational opportunities for residents and visitors including beach access, surfing, kayaking, boating activities, sightseeing, hiking, wildlife viewing, and diving, as well as providing for educational and research activities by the Telonicher Marine Lab, California State Polytechnic University, Humboldt. There are also many hospitality businesses, suppliers and services within the adjacent community of Trinidad (pop. ~300), that benefit from the ~12,000 visitors attracted to the area's scenery and activities available at Trinidad Harbor.

The Harbor is not only seen as a vital resource and as the Trinidad community's epicenter, but the area is also a part of the Rancheria's culture, history, and identity as a Tribe. Trinidad Bay is a beautiful and special environment, providing shelter for a diversity of species of marine plants and animals, which is why it is recognized as an Area of Special Biological Significance (ASBS). The effects of marine animal disease outbreaks are devastating to all these activities.

7. Impact on Trinidad Rancheria:

Trinidad Rancheria's harbor businesses experience risks due to the Pacific Ocean's changing ecosystems. Various sport fishing seasons are impacted greatly by weather, algal blooms, scientific extrapolations of fish populations, ocean acidification, and climate change. Marine animal disease has multiple impacts on Trinidad Rancheria. From an economic standpoint, the Marine animal disease that shuts down Trinidad Harbor operations also eliminates almost all the Tribe's non-gaming revenue – approximately $1.7 million per year. In addition, marine animal disease threatens important marine resources including salmon, clams, abalone (as both food sources and for the shells, which are used in ceremonial regalia), mussels, seaweed, eels, crab, surf fish, candle fish, and sea salt.

While the new responsibilities for the Indigenous Marine Stewardship Area (IMSA) have not yet been fully scoped out, Trinidad Rancheria will seek to expand its efforts to monitor, test and treat/preserve the sea life.

8. Impact of climate change:

Climate change is leading to several effects that have a detrimental impact on sea life that Trinidad Rancheria depends upon for subsistence, cultural resources, and revenue. Warming ocean temperatures push sea life North, resulting in the loss of local species. The increase in coastal winds changes upwelling so that there is less phytoplankton in coastal areas. Sea level rise (and increased winds) lead to more erosion. The increased CO_2 levels in the ocean decrease *the pH* – an increase in acidity. The increased acidity, "…leads to decreased shell growth in key species such as sea urchins, mussels, oysters, abalone, and crabs, thus making the animal more susceptible to predation, as well as decreased skeleton production of deep-sea corals and hydrocorals." (Largier, 2010, p. 2) The warming ocean water has had a direct impact on Trinidad Rancheria's crabbing operations.

10. Sea Level Rise

1. General description:

The most direct impact of sea level rise is an increased likelihood and level of coastal flooding; there are both long-term and short-term effects. In their "Climate Changes Impacts," report, the Gulf of the Farallones (GFNMS) and Cordell Bank (CBNMS) National Marine Sanctuary Advisory Councils note that the State of California is using a projection of a 40 cm (16 in.) sea level rise by 2050 and a 140 cm (55 in.) sea level rise by 2100. (Largier, 2010, p. 27) However, the report also notes that there is research that projects sea level rise to be 75 to 190 cm (30 – 75 in.) by 2100. (Largier, 2010, p. 28) Local wave and wind fields, tides, and tectonic movement add to the baseline sea level rise top to produce the total, local effect. In addition, annual and decade-long wind and wave fluctuations, El Nino events, storm surges and strong winds can raise sea levels an additional 30 cm (12 in). (Largier, 2010, p. 28) In short, a variety of climate and weather phenomena threaten to raise sea level up to seven feet in the lifetime of young Tribal members.

2. **Location:**

Sea level rise affects the entire coastline. Figure 69 displays a comparison of mid-century and end of century sea level rise projections using an intermediate greenhouse gas emission scenario.

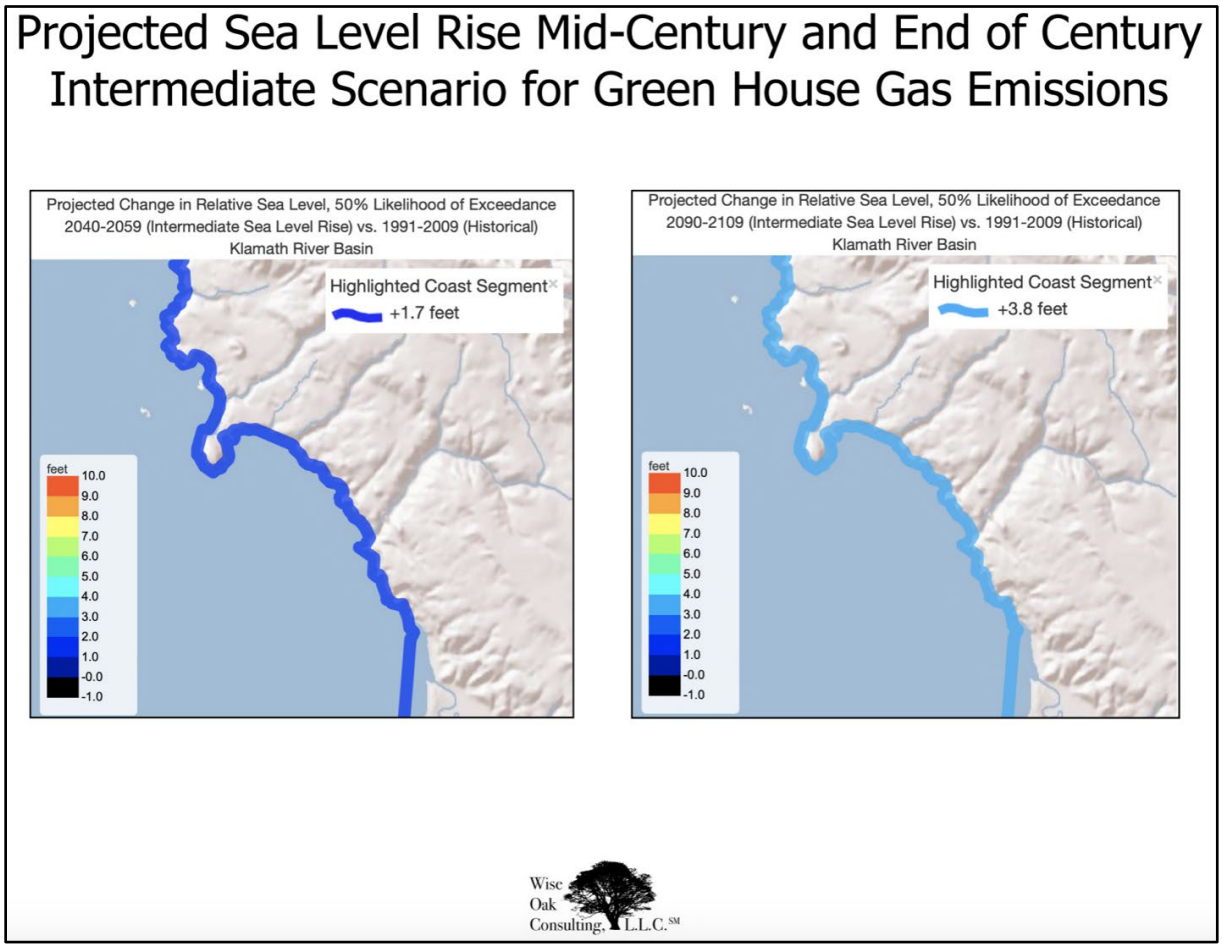


Figure 69. Sea Level Rise Mid-Century and End of Century Comparison.

3. **Extent:**

Figure 70 depicts the NOAA two-foot sea level rise confidence as projected for mid-century by the "Climate Changes Impacts" described in Part 1 of this hazard profile. Figure 71 depicts the NOAA five-foot sea level rise confidence as projected for the end of the century by the "Climate Changes Impacts" described in Part 1 of this hazard profile.

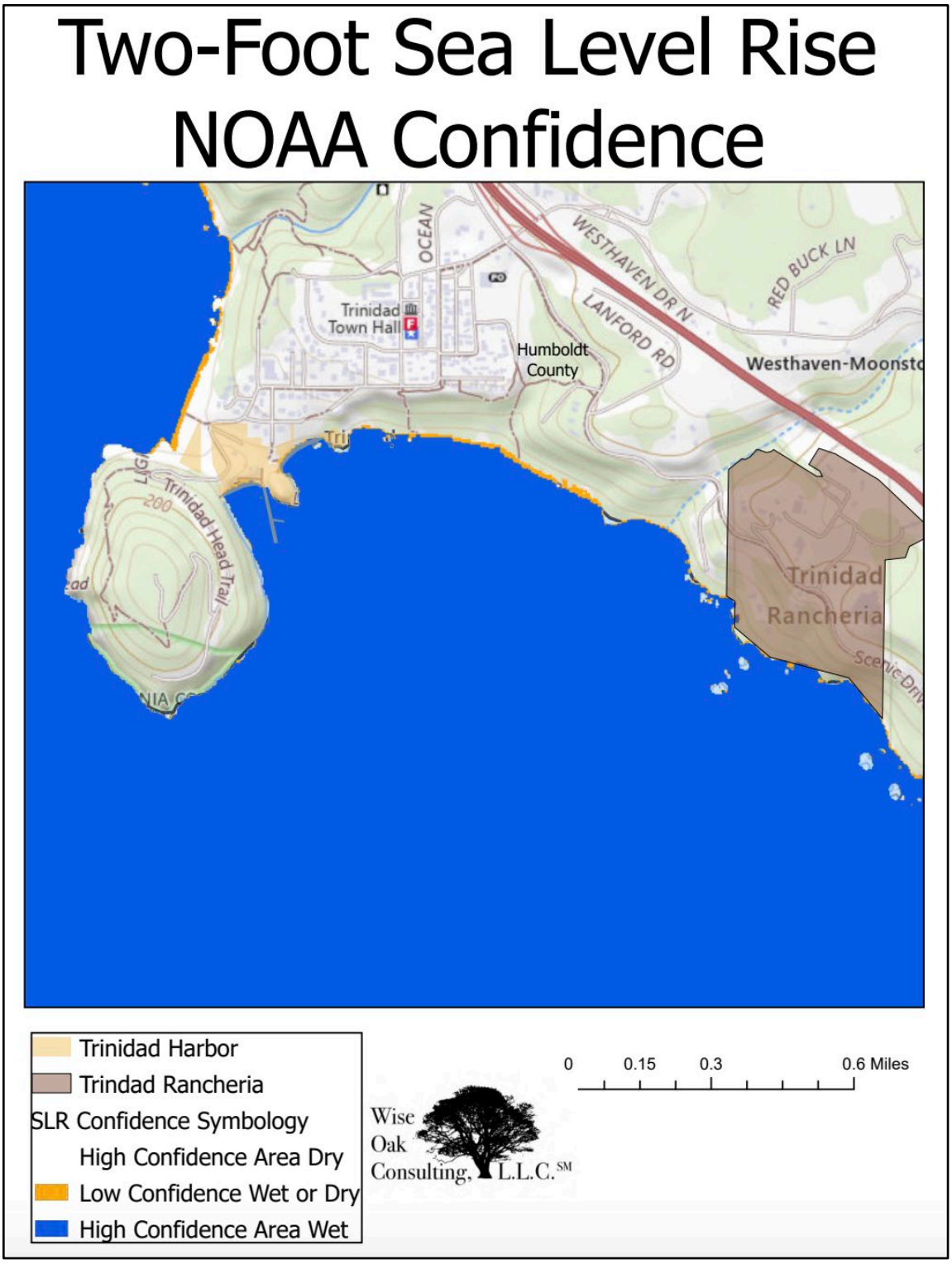


Figure 70. Two-Foot Sea Level Rise Confidence. (National Oceanic and Atmospheric Administration 2024)

Figure 71. Five-Foot Sea Level Rise Confidence. (National Oceanic and Atmospheric Administration 2024)

4. Previous Occurrences on Trinidad Rancheria:

As an ongoing, long-term phenomenon, sea level rise has yet to be fully measured in Trinidad Harbor. However, Trinidad Harbor staff reported an increase in extreme tides and waves that threaten the entire harbor.

5. Probability of Future Events on Trinidad Rancheria:

Corresponding to Figures 68-69, (50% likelihood of exceeding the inundation levels) in Section 2 of this hazard profile, Figure 72 depicts the confidence intervals that sea level rise will occur. NOAA developed models with confidence levels between 18% and 83% of the likelihood of exceeding the projected sea level rise projections. Figure 69 corresponds with "Climate Changes Impacts," report, the Gulf of the Farallones (GFNMS) and Cordell Bank (CBNMS) National Marine Sanctuary Advisory Councils that projects a 40 cm (16 in.) sea level rise by 2050 and a 140 cm (55 in.) sea level rise by 2100. (Largier, 2010, p. 27)

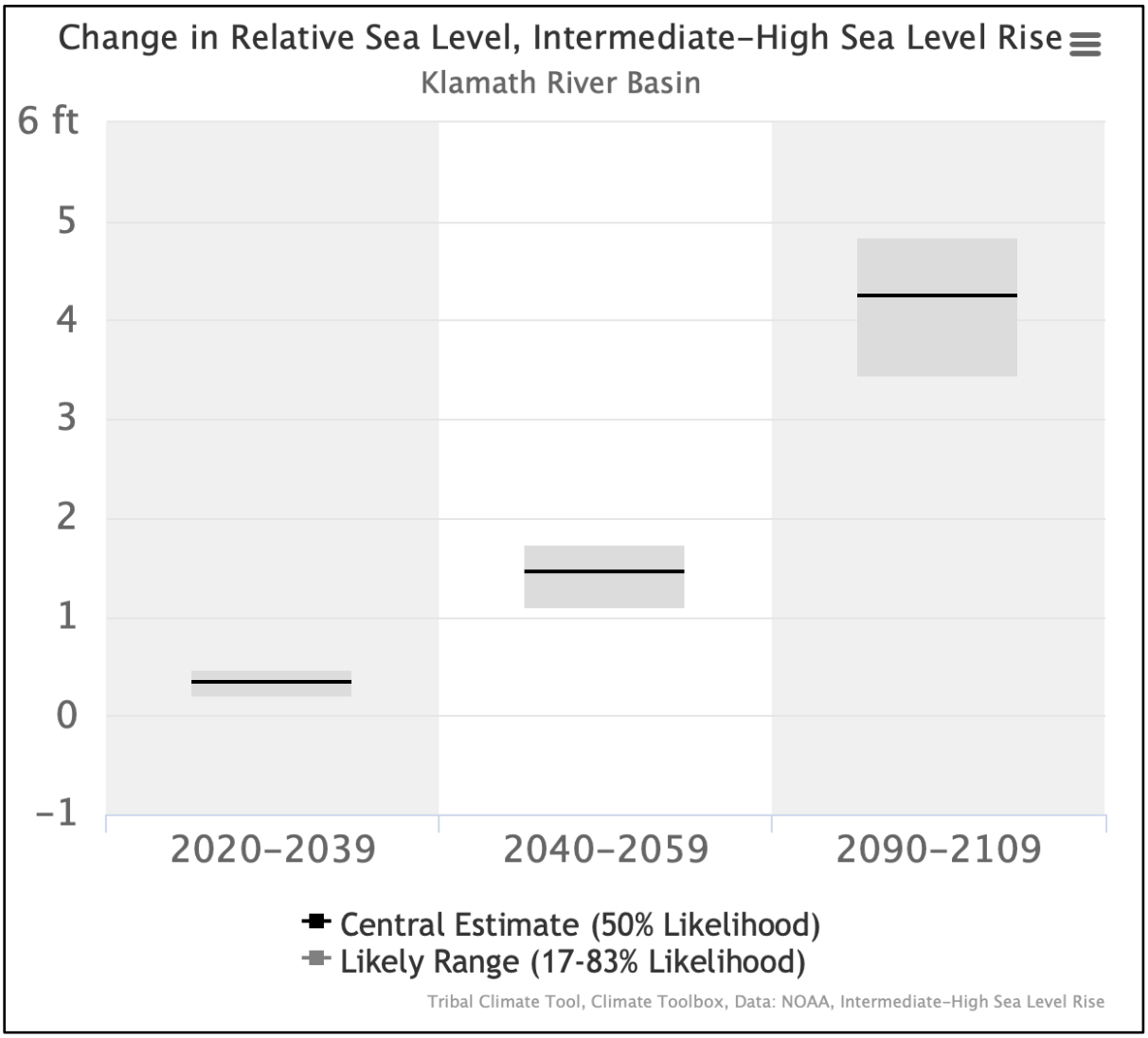


Figure 72. Probability of Sea Level Rise for an Intermediate-High Greenhouse Gas Scenario.

6. Vulnerability of Trinidad Rancheria:

Due to most of the Rancheria being 30 feet or more above sea level, most of the Rancheria is out of the projected sea level rise inundation zone. However, Trinidad Harbor operations are directly affected by sea level rise. In addition to the vulnerability of infrastructure, sea level rise could cut off access and eliminate the Rancheria's highest source of non-gaming revenue.

The Pacific Institute estimates that sea level rise will be up to 75 -190 cm (30-75 inches) by the year 2100, significantly affecting Trinidad Harbor Operations which represent the greatest source of non-gaming/hospitality revenues. In addition, the loss of sea life is a threat to cultural

resources and many traditional activities. Over 100 years, the loss of property is approximately $170 million assuming 3% inflation and no depreciation.

7. Impact on Trinidad Rancheria:

"Potential effects of sea level rise include shoreline erosion, saltwater intrusion into groundwater aquifers, inundation of wetlands and estuaries, and threats to cultural and historic resources as well as infrastructure." (Largier, 2010, p. 31) As seen in the light blue band in Figure 73, the Pacific Institute projects that the Trinidad Harbor operations could be inaccessible by the end of the century under a high greenhouse emissions scenario. Sea level rise over the next century could subsume not only the beaches, but also Trinidad Rancheria's harbor, Seascape Restaurant, and Seascape House enterprises. In the long term, the Tribe will be forced to move/relocate/elevate these facilities or face their complete loss. A loss of Trinidad Harbor operations would eliminate almost all the Tribe's non-gaming revenue – approximately $1.7 million per year.

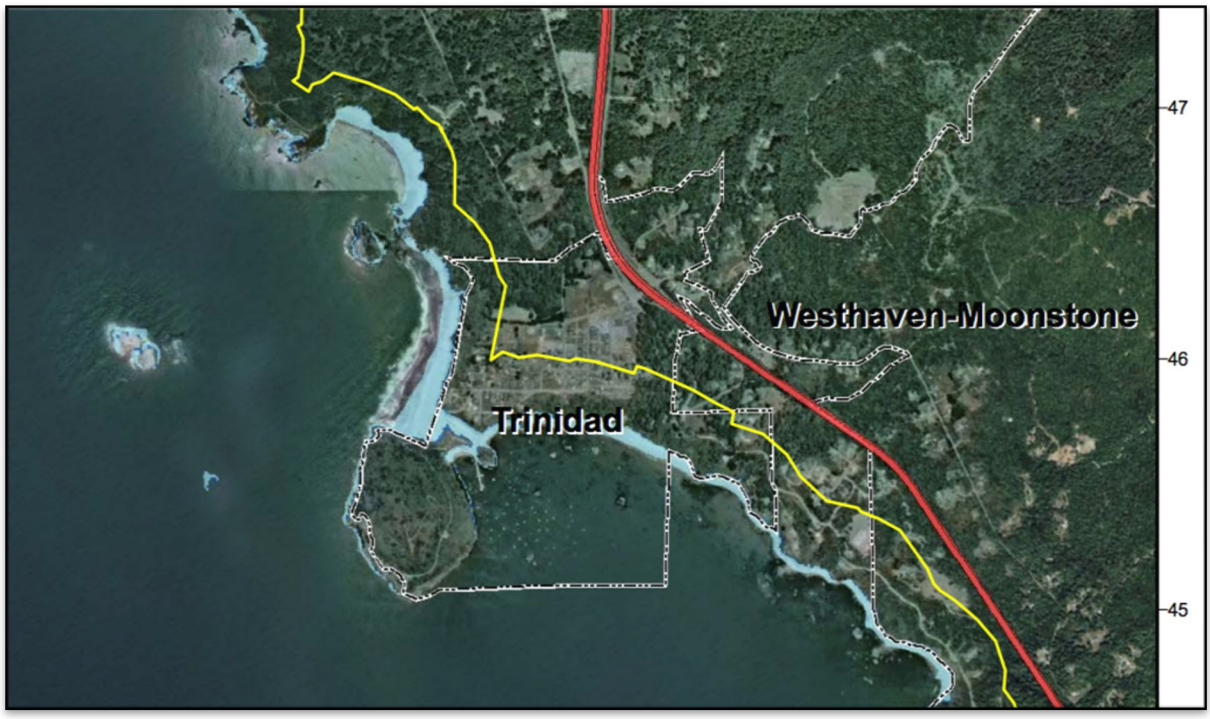


Figure 73. Pacific Institute Sea Level Rise Hazard Map for a High Greenhouse Gas Emission Scenario.

8. Impact of Climate Change:

Climate change is the driver of sea level rise. The intermediate RCP 4.5 scenario assumes a change of human behavior to reduce greenhouse gasses and the high RCP 8.5 scenario assumes no change in human behavior. Again, sea level rise has occurred and will continue. The only question is how much and how quickly. Since the Tribe cannot affect global behavior, it will continue to take mitigation actions that it can control.

11. Severe Winter Weather

1. General description:

Severe winter storms pose a significant risk to life and property in the region by creating conditions that disrupt essential systems such as public utilities, telecommunications, and transportation routes. High winds can and do occasionally cause tornado-like damage to local homes and businesses. High winds can have destructive impacts, especially to trees, power lines, and utility services. This is especially the case during severe winter storms with extensive rain that saturates the ground resulting in landslides, trees, and power lines being blown down, etc. The combination of severe winter storms being a "normal" event in the Northwest Coast and the expected increase in severity due to climate change, makes severe winter storms a significant hazard. Note that unlike other areas of the U.S., Trinidad Rancheria does not receive snow and ice during winter storms; the main impacts result from rain and wind. The impact of rain on floods and landslides is covered in their respective sections.

2. Location:

Severe winter storms affect all Trinidad Rancheria property and assets. While the main flooding damage is along Scenic Drive on the Main Parcel, all buildings are susceptible to wind damage, especially fallen trees and flying debris. Trinidad Harbor Operations mitigate the annual winter storm hazard by closing operations and removing at-risk equipment from the ocean. The entire Rancheria faces utility and some communications loss due to down power lines. Figure 74 is captured by NOAA's GOES-West satellite showed a "Pineapple Express" bringing tropical moisture to the West Coast in the winter of 2024. A Pineapple Express is the most significant seasonal severe storm that Trinidad Rancheria faces. Not only does the storm cover the entire Rancheria, but it also impacts the entire Northwest.

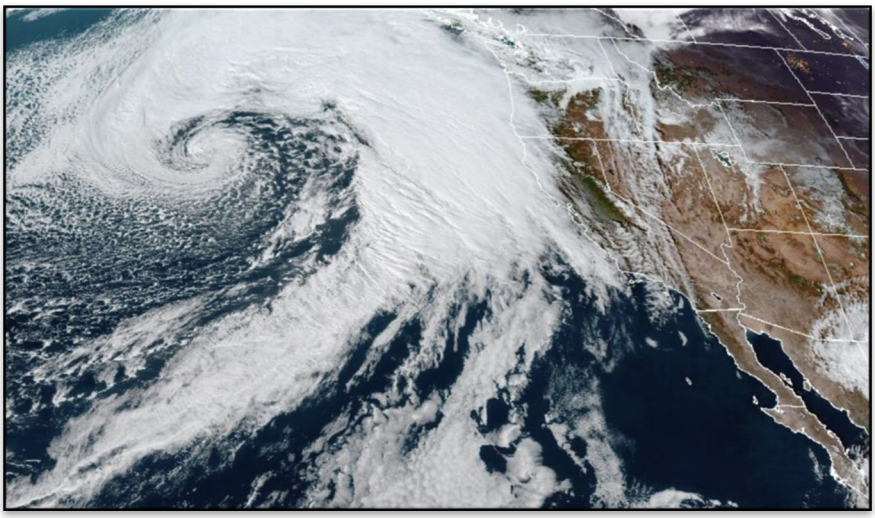


Figure 74. NOAA Satellite Photograph of a Pineapple Express, January 31, 2024.

3. **Extent:**

Figure 75 is a picture of a fallen tree that was blown down by severe storms on March 2, 2024. It caused minor damage to The Heights Casino. However, a tree of that size could cause much greater damage to the casino or other buildings.

Figure 75. Tree Down at The Heights Casino, March 2, 2024.

Trinidad Rancheria can expect to incur damage to its property and disruptions to its operations and enterprises, especially at the Main Parcel. Given that many parts are in generally poor condition and its exposure to slides, Scenic Drive has a high probability of washing out in severe winter storms, isolating up to 18 homes and potentially cutting of Tribal Operations and The Heights Casino/Sunset Restaurant.

4. Previous Occurrences on Trinidad Rancheria:

Historically, the most severe winter storms for Trinidad Rancheria occur from October through March (Figure 76).

Humboldt County has received nine (9) Federal disaster declarations for severe/coastal storms since 1953 that included such effects as flooding, landslides, mudslides, extreme winds, and rainfall. However, considering that 10 of the 12 flood hazards occur during the October-March "severe storm season," essentially 20 of 27 Federal disaster declarations in Humboldt County have been due to severe storms.

Trinidad Rancheria has received damage from severe winter storms, largely due to wind and rain, including fallen trees/branches, slides, erosion, localized flooding, and structural wind damage. Snow and ice are not part of winter storms affecting Trinidad Rancheria.

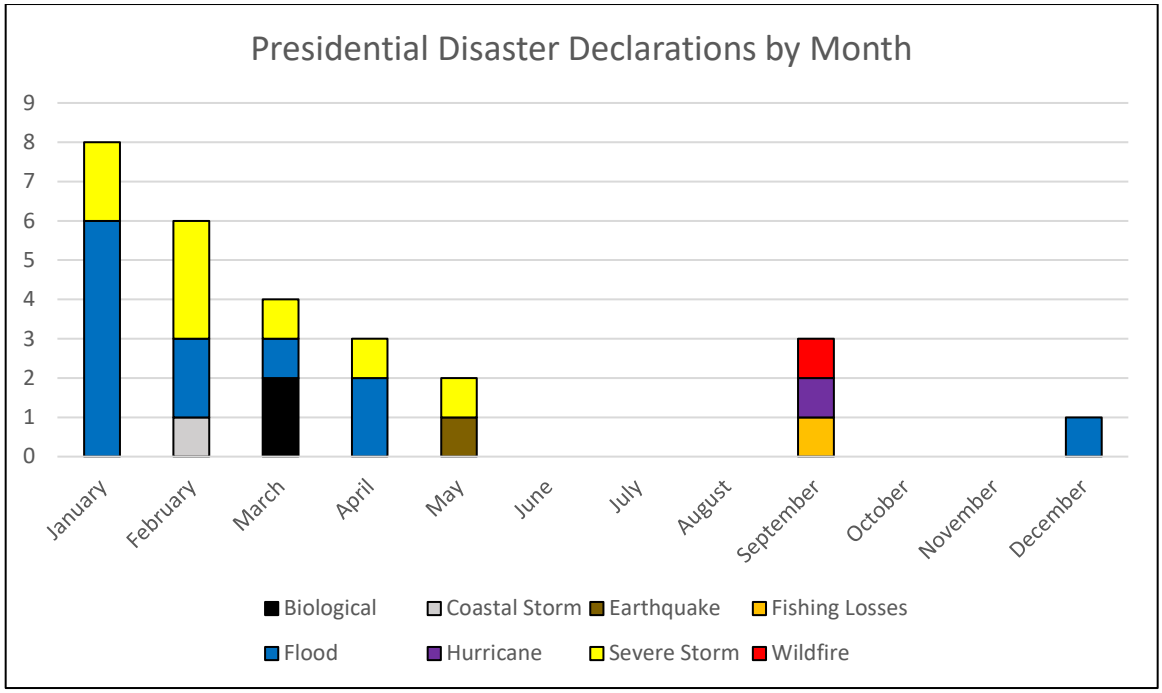


Figure 76. Humboldt County Presidential Disaster Declarations by Month.

Section II: Hazard Identification and Risk Assessment

Table 24 lists the FEMA Federal disaster declarations, including financial assistance, for Humboldt County. While total FEMA assistance includes all designated areas (not just Humboldt County), the amount of financial assistance indicates the magnitude of the impact of the disasters.

Table 24. Humboldt County Severe Storm and Flood Presidential Disaster Declarations.

Disaster Type	Disaster Declaration*	Dates	Total FEMA Assistance ($)**
Flood	DR-183-CA	December 24, 1964	IA – unknown PA – unknown
Flood	DR-212-CA	January 22, 1966	IA – unknown PA – unknown
Flood	DR-253-CA	January 26, 1969	IA – unknown PA – unknown
Flood	DR-329-CA	April 5, 1972	IA – unknown PA – unknown
Flood	DR-412-CA	January 25, 1974	IA – unknown PA – unknown
Flood	DR-651-CA	December 19, 1981 - January 8, 1983	IA – unknown PA – unknown
Coastal Storm	DR-677-CA	January 21, 1983 – March 30, 1983	IA – unknown PA – unknown
Flood	DR-758-CA	February 12, 1986 - March 10, 1986	IA – unknown PA – unknown
Flood	DR-979-CA	January 5, 1993 - March 20, 1993	IA – unknown PA – unknown
Severe Storm	DR-1044-CA	January 3, 1995 – January 10, 1995	IA – unknown PA – unknown
Severe Storm	DR-1046-CA	February 13, 1995 – April 19, 1995	IA – unknown PA – unknown
Severe Storm	DR-1155-CA	December 28, 1996 – January 4, 1997	IA – unknown PA – unknown
Severe Storm	DR-1203-CA	February 2, 1988 – April 30, 1998	IA – unknown PA – unknown
Severe Storm	DR-1628-CA	December 17, 2005 - January 3, 2006	IA – N/A (Humboldt County) PA • PA (Categories A-B): $29,679,229.24

Table 24. Humboldt County Severe Storm and Flood Presidential Disaster Declarations.			
Disaster Type	**Disaster Declaration***	**Dates**	**Total FEMA Assistance ($)****
			• PA (Categories C-G): $117,640,624.50 HMGP: N/A
Severe Storm	DR-4301-CA	February 21, 2017 – July 10, 2017	IA – N/A PA • PA (Categories A-B): $23,067,920.97 • PA (Categories C-G): $105,573,045.80 HMGP: $22,708,199.94
Flood	DR-4308-CA	February 1, 2017 - February 23, 2017	IA – N/A PA • PA (Categories A-B): $151,794,535.62 • PA (Categories C-G): $272,635,923.77 HMGP: $15,012,050.80
Severe Storm	DR-4434-CA	February 24, 2019 – March 1, 2019	IA – N/A PA • PA (Categories A-B): $7,828,033.81 • PA (Categories C-G): $18,570,020.27 HMGP: $4,947,792.08
Flood	EM-3591-CA	January 8, 2023 - January 31, 2023	IA – N/A PA • PA (Category A): N/A • PA (Category B): unknown • PA (Categories C-G): N/A HMGP: N/A
Flood	DR-4683-CA	Dec 27, 2022 - Jan 31, 2023	IA – N/A PA • PA (Categories A-B): $50,624,153.98 • PA (Categories C-G): $34,630,876.55 HMGP: $16,966,039.17
Flood	EM-3592-CA	March 9, 2023 – July 10, 2023	IA – N/A PA • PA (Category A): N/A • PA (Category B): unknown • PA (Categories C-G): N/A

Table 24. Humboldt County Severe Storm and Flood Presidential Disaster Declarations.			
Disaster Type	**Disaster Declaration***	**Dates**	**Total FEMA Assistance ($)****
			HMGP: N/A
Severe Storm	DR-4699-CA	February 21, 2023 – July 10, 2023	IA – N/A (Humboldt) PA • PA (Categories A-B): $18,091,653.37 • PA (Categories C-G): $14,124,227.92 HMGP: $4,121,352.89

*Types of disaster declarations

- EM (Emergency Declaration): "Emergency Declarations, an incident is any instance that the President determines warrants supplemental emergency assistance to save lives and protect property and public health and safety, or to lessen or avert the threat of a catastrophe." (Federal Emergency Management Agency 2020)
- DR (Major Disaster Declaration): "For Major Disaster Declarations, an incident is any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion. Major Disaster Declarations may include a combination of incident types, such as storms and landslides." (Federal Emergency Management Agency 2020)

** Public Assistance - Dollars Obligated: Funds made available to the State/Tribe via electronic transfer following FEMA's final review and approval of Public Assistance projects.

5. Probability of Future Events on Trinidad Rancheria:

Severe winter storms are seasonal in nature and becoming more extreme with climate change. Trinidad Rancheria can expect a severe winter storm during any given year. The nine (9) Federal disaster declarations for severe winter/coastal storms since 1953 suggest Trinidad Rancheria could face a disastrous severe winter storm every seven (7) years. Three (3) disaster declarations occurred in the six (6) years between 2017 and 2023. In addition, El Niño is a recurring ocean-atmosphere phenomenon that occurs every two (2) to seven (7) years. Strong El Niños can bring extreme waves from the south-southwest, more frequent severe storms, increased sea levels, above average river flows, warmer than normal water temperatures, flooding, and erosion. Historical disaster declarations and the strong El Niño pattern reinforce the likelihood of a disaster-level severe storm every two (2) to seven (7) years.

6. Vulnerability of Trinidad Rancheria:

Severe winter storms present an annual hazard to Trinidad Rancheria on multiple fronts. First, the seasonal nature of the hazard means it is a matter of exactly how bad the storm and its effects will be rather than if the storms will strike. Second, as stated above, climate change is causing storms to be both more frequent and stronger. Third, the 18 Tribal homes along Scenic Drive are not only vulnerable to wind damage (like all Tribal housing), but they are also highly susceptible to flooding and slides. Finally, the historic slide areas along Scenic drive and the generally poor maintenance of the road make the Main Parcel highly vulnerable to complete cut off by storm-caused road failure. Such an impact both cuts off vital services delivered by Tribal Operations and isolates The Heights Casino and Sunset Restaurant. The main impacts result from rain and wind. The impact of floods and landslides are described in their respective sections; the direct impacts of high winds are structural damage, fallen trees, and flying debris. Trinidad Harbor Operations mitigate the annual winter storm hazard by closing operations and removing at-risk equipment from the ocean. The main indirect impact is the loss of utilities and some communications due to down power lines.

7. Impact on Trinidad Rancheria:

The direct impact of a slide that cuts off Tribal Operations and The Heights Casino/Sunset Restaurant is $3,000 per day in lost net revenue and approximately $6,700 per day in payroll. In addition, approximately 60 Tribal members in 18 homes can be cutoff and require evacuation and mass care and sheltering. A mere 10% rate of damage to Trinidad Rancheria facilities from down trees, power lines, etc. represents $6.5 million in losses.

8. Impact of Climate Change:

With respect to Severe Weather, there are at least three main impacts due to climate change regarding precipitation, landslides, coastal flooding, and strong winds.

Precipitation will likely increase during the winter storms and will likely lead to more flooding and landslides.

Climate change could potentially increase the Tribe's vulnerability. Sea-level rise could increase storm surge which has a direct impact on Trinidad Harbor operations and facilities.

Increased severe weather could lead to more frequent high wind events and would increase the need for additional mitigation efforts to adapt current and future structures to these scenarios.

12. Smoke

1. General hazard description:

"Wildfire smoke is a mixture of hazardous air pollutants, such $PM_{2.5}$, NO_2, Ozone, aromatic hydrocarbons, or lead. In addition to contaminating the air with toxic pollutants, wildfires also simultaneously impact the climate by releasing large quantities of carbon dioxide and other greenhouse gases into the atmosphere." (World Health Organization, 2024) While the coastal location largely prevents a buildup of air pollution, temporarily hazardous air conditions can occur as a result of natural and human-caused hazards, including wildfires, hazardous material accidents, and structural fires. As Nevada experienced with such fires as the Caldor Fire, smoke from fires in California can greatly impact air quality downwind for hundreds and even thousands of miles. Similarly, wildfire smoke has settled into Northern California valleys and severely impacted air quality. As depicted in Figure 77, severe wildfire smoke has shrouded even coastal communities.

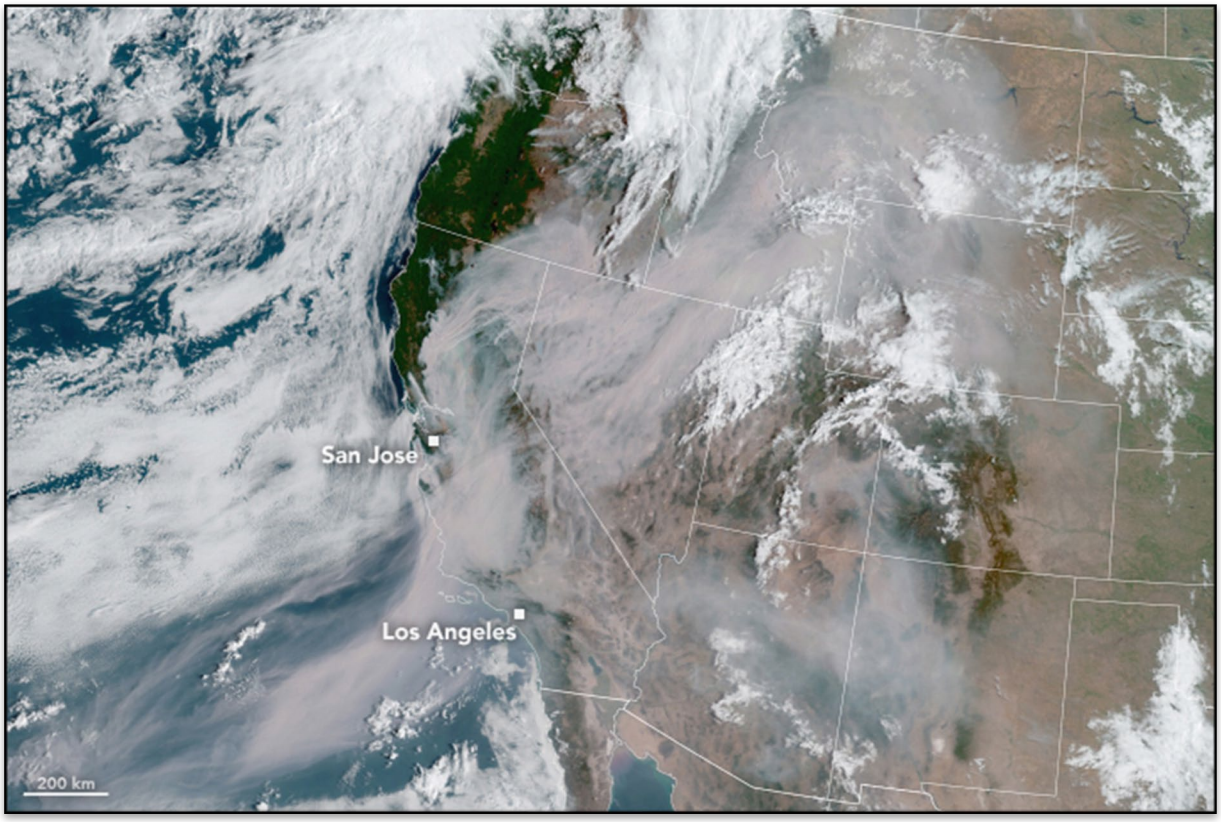


Figure 77. Wildfire Smoke August 20, 2020.

2. **Location:**

Again, as seen in Figure 75, wildfire smoke can inundate any location in California. Due to its small size, smoke settling on the region would cover the entire reservation.

3. **Extent:**

Figure 78 depicts the extreme nature of wildfire smoke.

Figure 78. Wildfire Smoke.

Quite simply wildfire smoke can make people sick. Breathing in smoke can affect you right away, causing:

- Coughing
- Trouble breathing
- Wheezing
- Asthma attacks
- Stinging eyes
- Scratchy throat
- Runny nose
- Irritated sinuses
- Headaches

- Tiredness
- Chest pain
- Fast heartbeat

Notably, smoke can cause stress by limiting outdoor activities, isolating from family and friends, disrupting our normal lives, and bringing up memories of past events. (Air Now, 2023)

The air quality index (Figure 79) is published at websites such as airnow.gov.

Alert Color	Level of Concern	Value of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. Most people are unlikely to be affected.
Red	Unhealthy	151 to 200	Some people may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 – 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 to 500	Health warning of emergency conditions: Everyone is more likely to be affected.

Figure 79. Air Quality Index.

4. Previous Occurrences on Trinidad Rancheria:

Smoke is a new hazard of concern that requires further study to develop a detailed history of previous occurrences. While Smoke is a new hazard of concern for Trinidad Rancheria and there is limited historical data, the 2020 recent wildfires highlight the seriousness of this new concern. Figure 80 is an image of the smoke in Eureka caused by the wildfires of September 2020.

Figure 80. Smoke-Filled Sky in Eureka, CA, 9:30 A.M., September 9, 2020. (North Coast Journal of Politics, People & Art, 2020)

5. Probability of Future Events on Trinidad Rancheria:

The probability of a future Smoke event is difficult to estimate. As described in the Wildfire hazard profile, Wildfires will continue to be annual seasonal occurrences. However, the combination of factors that lead to a smoke event such as in 2020 are numerous and variable – winds, pressure inversion, size, nature, and proximity of the wildfire, etc.

6. Vulnerability of Trinidad Rancheria:

Smoke from a wildfire can quickly and completely cover the entire reservation. The only escape is to leave the area. Secondarily, the Rancheria can mitigate the impact by keeping people indoors, sealing the building off as with a HAZMAT accident (included in separate emergency

response plans), and using air filters with the air source. Smoke can also harm plants and animals. Smoke will increase the maintenance required for air filtration systems and cleaning required for exposed facilities and equipment.

7. **Impact on Trinidad Rancheria:**

Wildfire smoke is a mixture of air pollutants of which particulate matter (PM) is the principal public health threat.

$PM_{2.5}$ from wildfire smoke is associated with premature deaths in the general population, and can cause and exacerbate diseases of the lungs, heart, brain/nervous system, skin, gut, kidney, eyes, nose ,and liver. It has also been shown to lead to cognitive impairment and memory loss. Firefighters and emergency response workers are also greatly impacted by injuries, burns, and smoke inhalation, particularly at high concentrations. (World Health Organization, 2024)

Wildfire smoke can make anyone sick, but some people have a higher risk of getting sick. People most at-risk include: (Centeers for Disease Control and Prevention, 2024)

- People with chronic conditions like asthma, Chronic Obstructive Pulmonary Disease (COPD), diabetes, chronic kidney disease, or heart disease
- Those who are pregnant
- Children
- First Responders

Because tribal members have lower overall health than the general public, they can expect to be more adversely affected by smoke.

8. **Impact of Climate Change:**

See the hazard profile regarding the impact of climate change.

13. Tsunami

1. General hazard description:

A tsunami is a series of extremely long waves caused when an event, such as an earthquake, suddenly shifts water in the ocean or in a lake. A tsunami radiates outward in all directions from its source and can move across entire oceans in less than a day. As depicted in Figure 79, tsunami wave heights are small but travel extremely quickly across the deep ocean. As the tsunami approaches the shore, it slows considerably as the wave height also grows. As depicted in Figure 81, even a tsunami that has slowed to 20 m.p.h. is faster than people can run. A wave of almost any height will sweep people away at that speed.

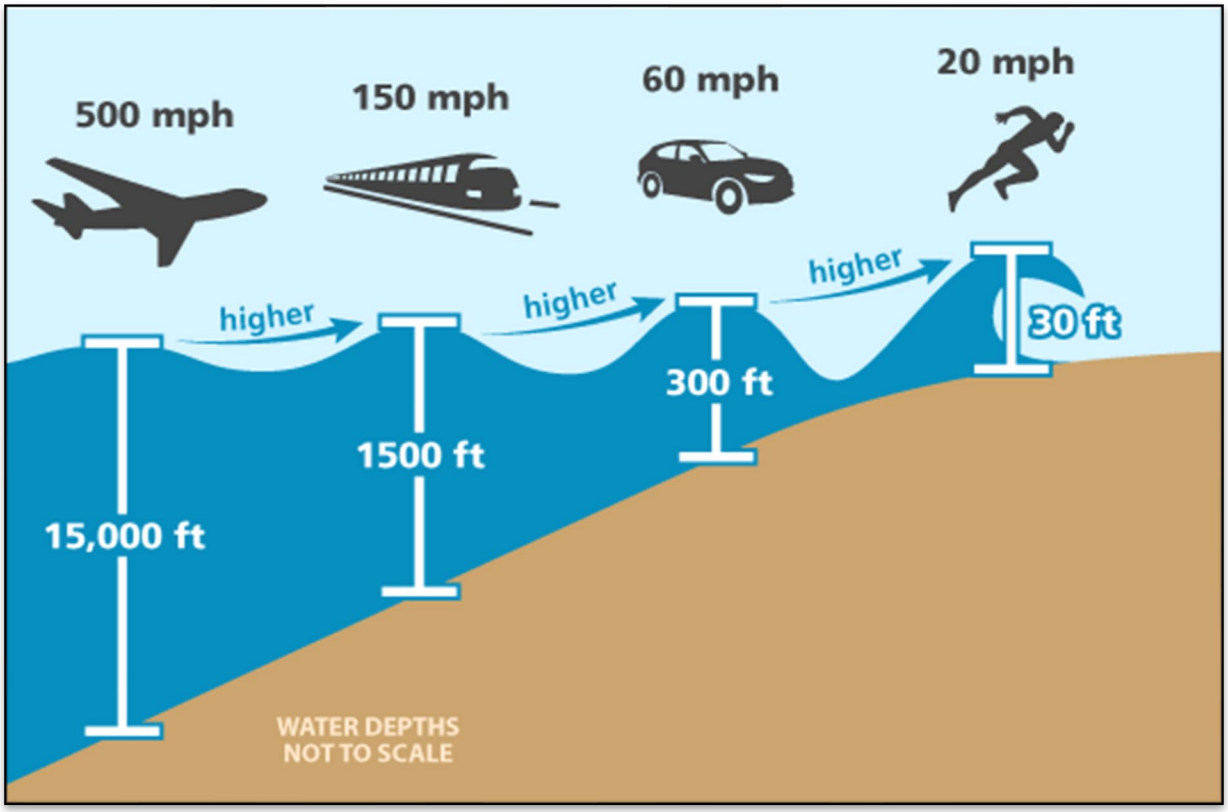


Figure 81. Comparable Speed of Tsunami Propagation Based on Water Depth. (Washington State Department of Natural Resources, 2024)

Unlike a typical wind wave with a short wavelength that breaks as it approaches shore, a tsunami has a long wavelength and will often approach as a wall of water that does not break but can travel far inland (Figure 82). Tsunamis may also strike with the trough of the wave first – causing the water to first suddenly recede like a very low tide, exposing the ocean floor, reefs, and fish.

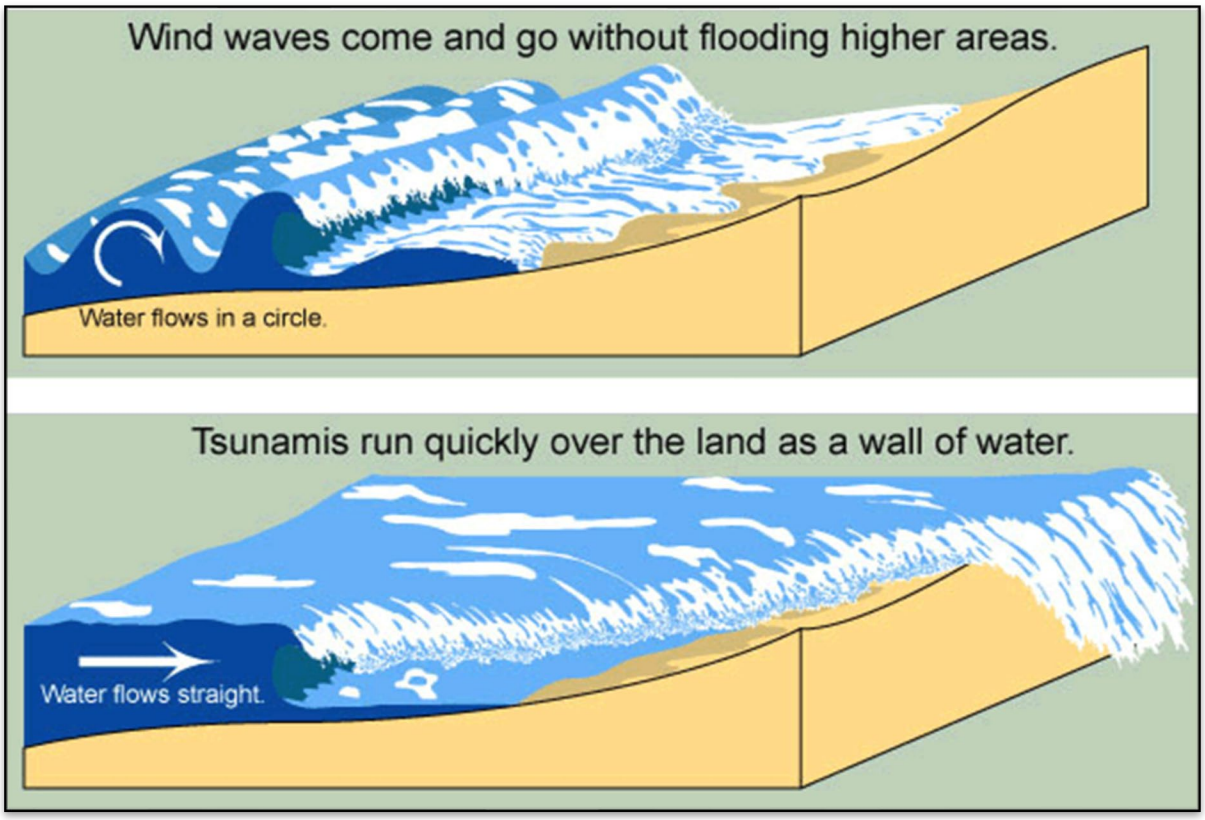


Figure 82. Wind Wave vs. a Tsunami Wave. (Washington State Department of Natural Resources, 2024)

Since the time between waves may be between minutes and hours, people must remain out of the inundation zone until they receive an all-clear signal. A number of phenomena may cause tsunamis (Figure 83), including:

- Earthquakes
- Submarine explosions
- Landslides – terrestrial and submarine
- Meteorite impacts
- Weather disturbances

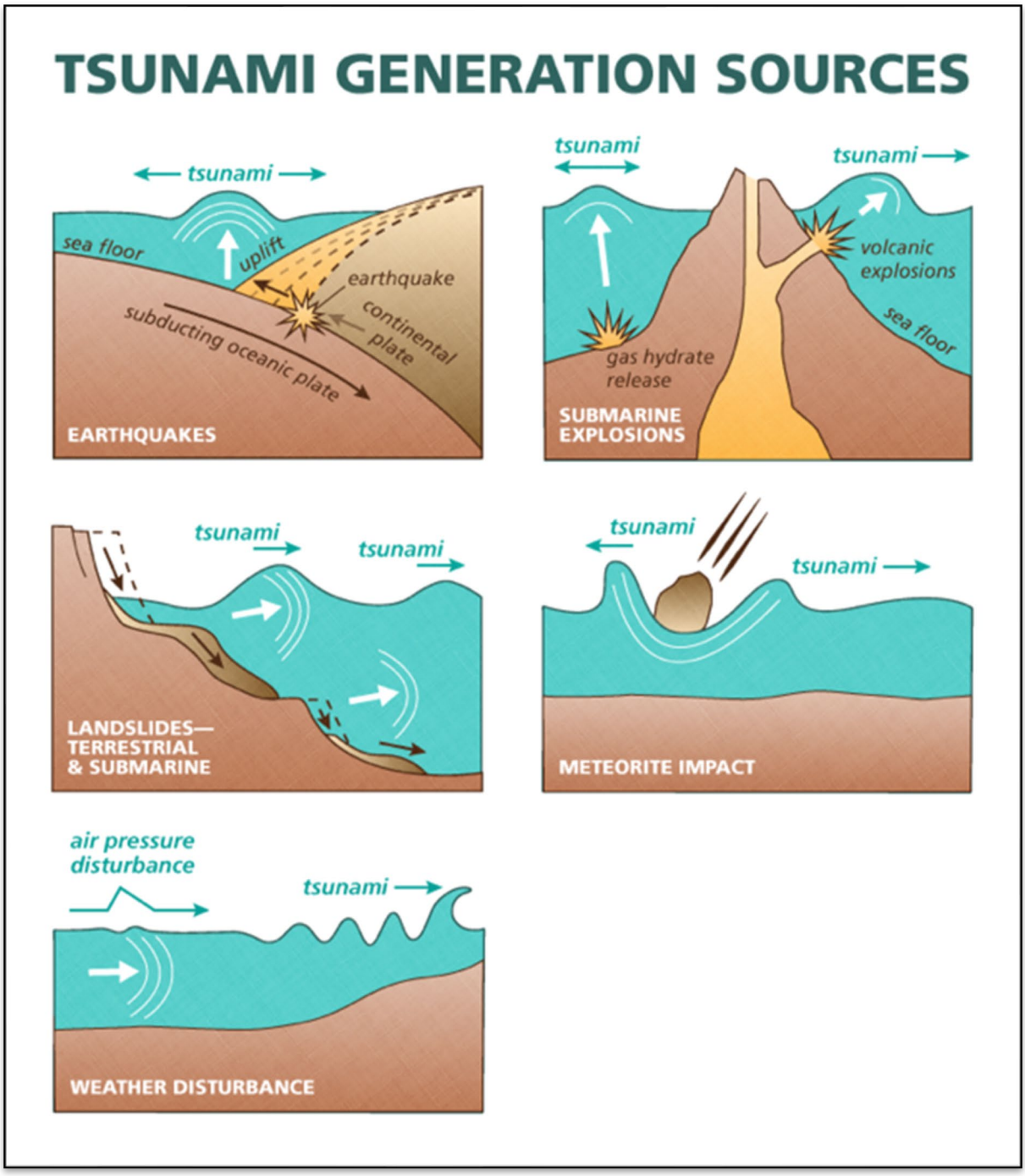


Figure 83. Tsunami Generation Sources. (Washington State Department of Natural Resources 2024)

The tsunami risks to the California Coast are summarized in Table 25.

Table 25. Types of Tsunami Risk.

Type of Tsunami	Description	Areas of Greatest Impact	Time to Evacuate
Distant	A tsunami is created by a distant earthquake or landslide and travels across the ocean	Pacific coastal communities	Hours
Cascadia subduction zone	Tsunami created by a large Magnitude 8–9 earthquake off the California, Oregon, or British Columbia coasts	Pacific coastal communities	Tens of minutes
Local earthquake (for example, the Seattle or Tacoma faults)	Tsunami created in a large body of water from an earthquake on local faults	Communities close to the body of water	Minutes to tens of minutes
Landslide-caused tsunami	Large landslide occurs underwater or slides from land into water	Depends on where the landslide occurs	Minutes to tens of minutes

As depicted in Figure 84, California has three major earthquake sources that have the potential to cause tsunamis:

- Subduction zone earthquakes.
- Deep (Benioff Zone) earthquakes.
- Shallow crustal fault earthquakes.

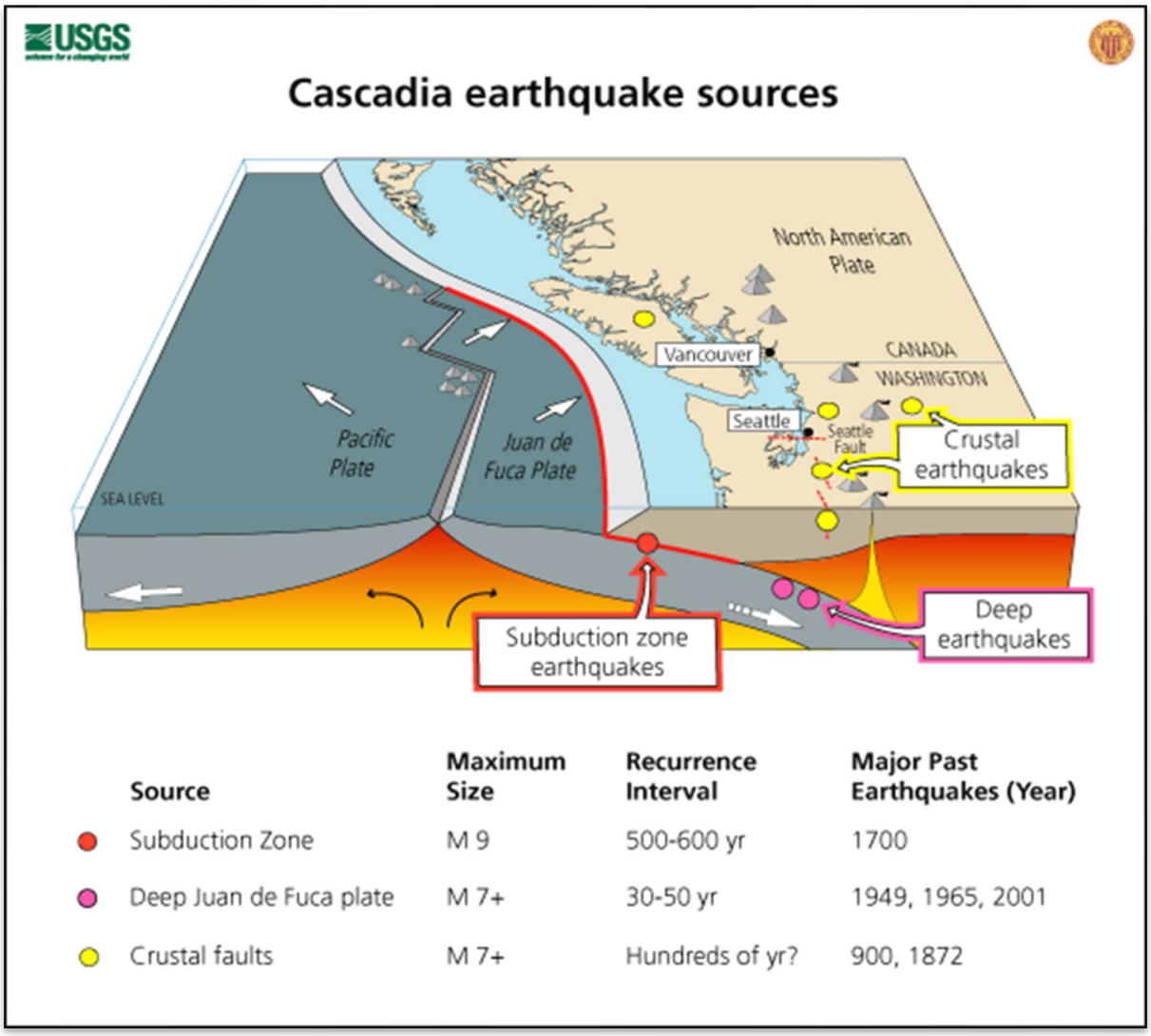


Figure 84. California Sources of Earthquakes and Relative Frequencies. (Washington State Department of Natural Resources, 2024)

Figures 85-87 depict how tsunamis are created in subduction zone earthquakes.

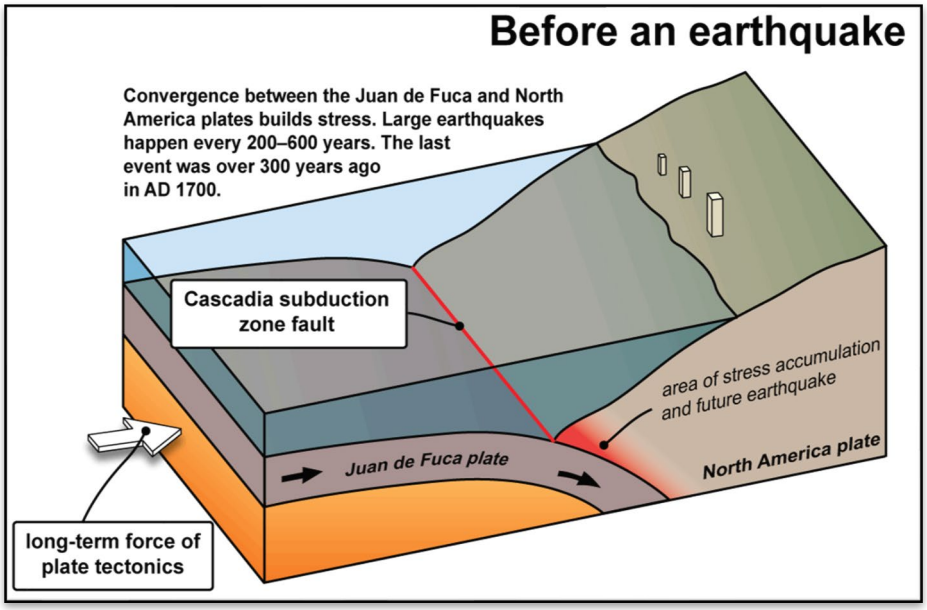


Figure 85. Before a Subduction Zone Earthquake. (Washington State Department of Natural Resources 2024)

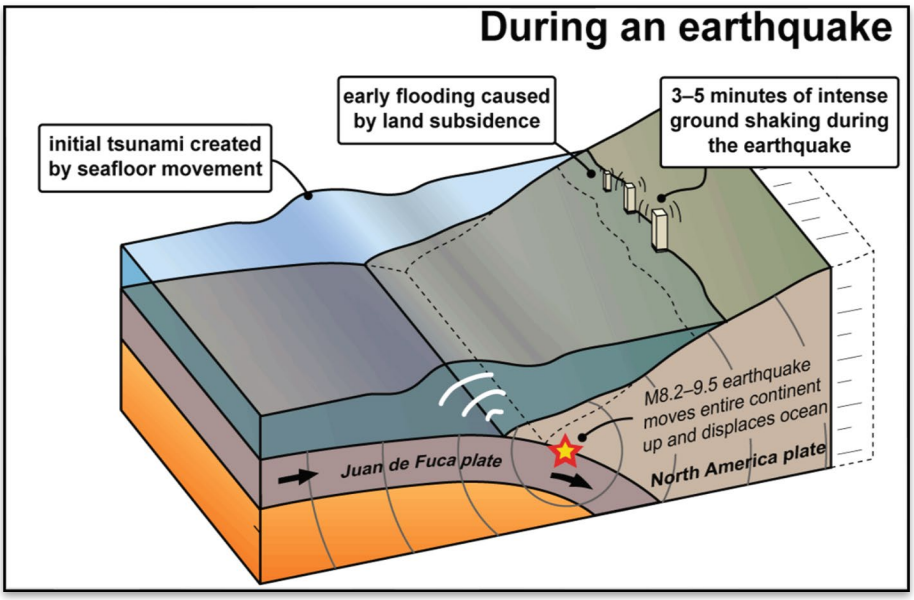


Figure 86. During a Subduction Zone Earthquake. (Washington State Department of Natural Resources 2024)

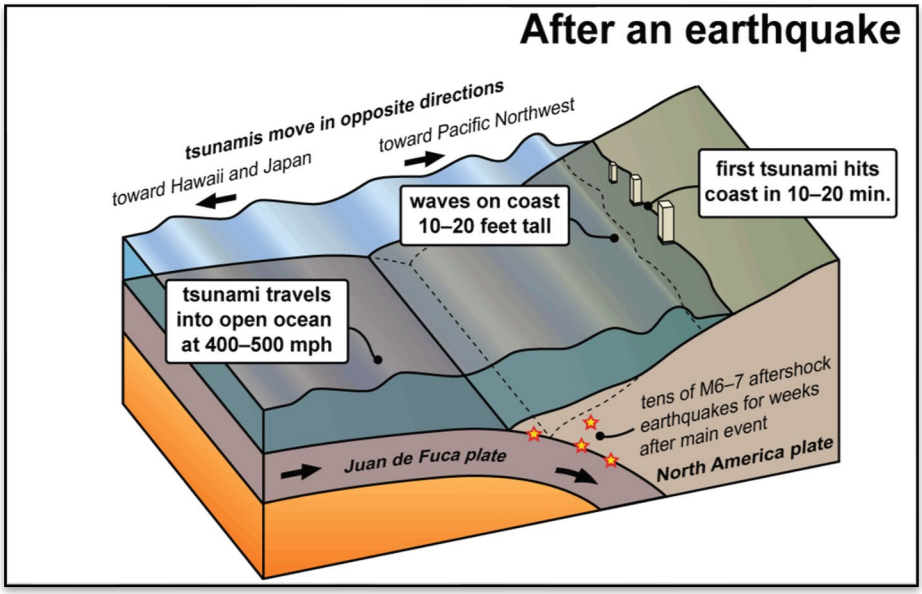


Figure 87. After a Subduction Zone Earthquake. (Washington State Department of Natural Resources 2024)

In addition to subduction zone earthquakes, crustal fault and deep (Benioff Zone) earthquakes and landslides may cause tsunamis. These are largely a threat in the Seattle-Puget Sound region and less of a concern for the Reservation. Tsunamis generated from earthquakes at other subduction zones and faults around the Pacific Ocean have the potential to impact our shores. Of the numerous historical events that have occurred, only the 1964 Alaska earthquake-generated tsunami has caused damage to the California coast. Most tsunami alert messages received for California are related to earthquakes in Alaska. Therefore, this section focuses on the subduction zone earthquake.

2. **Location:**

The Trinidad Rancheria coastline, especially the Trinidad Harbor Operations would be directly impacted by a tsunami. The entire Tribe would be indirectly affected due to both loss in facilities, property, revenue, and being cutoff due to Highway-101 washouts.

The most significant tsunami for the State of California in general and the Trinidad Rancheria specifically, is the Cascadia Subduction Zone Earthquake and Tsunami. As is evident in Figure 88, the Cascadia Subduction Zone is parallel to the Pacific Northwest Coast.

Figure 88. Cascadia Subduction Zone.

3. **Extent:**

The catastrophic (M9.0) Cascadia Subduction Zone Earthquake and Tsunami "…scenario assumes:

- The earthquake will be felt throughout the Pacific Northwest,
- Shaking will last for four to six minutes,
- The coast will subside approximately six feet (two meters), and
- A tsunami will reach the coast in 15 to 30 minutes in some locations.

The height of the tsunami will vary along the coast depending on local bathymetry and topography. It may be as high as 30 to 40 feet (9 to 12 meters) in some places.

The amount of subsidence caused by the earthquake and the tide will also affect wave heights. Waves of varying heights will continue over a period of hours, and the first may not be the largest." (National Oceanic and Atmospheric Administration 2023)

4. Previous Occurrences on Trinidad Rancheria:

Two tsunami events in the last century caused major damage on the California coast. The 1960 Chilean earthquake produced a great tsunami that impacted the entire Pacific basin. Damage was reported in California ports and harbors from San Diego to Crescent City and losses exceeded $1 million. The worst event was the 1964 tsunami generated by the Magnitude-9.2 Alaska earthquake, which killed 12 in Northern California and caused over $15 million in damage. The peak wave height was 21 feet in Crescent City and 29 city blocks were inundated. Wave oscillations in San Francisco Bay lasted more than 12 hours, causing nearly $200,000 in damage to boats and harbor structures." (Humboldt County, CA, 2019, pp. 14-2) Most recently, the February 27th, 2010, earthquake near Chile also resulted in damage in California, and the March 11th, 2011, Tohoku earthquake and tsunami resulted in nearly $100 million in damage to the California maritime community.

Eighty-two possible or confirmed tsunamis in California have been observed or recorded. Table 26 summarizes the major Northern California tsunami events. Most of these events were small and only detected by tide gauges. Eleven events were large enough to cause damage and four caused deaths. At least three of these events had direct measurable impacts on Humboldt County.

Table 26. Tsunamis That Have Affected the North Coast of California.

Date	Origin of Tsunami	Impacted Areas	Run-up (meters)	Observations / Comments
1/26/1700	Cascadia Subduction Zone	Entire Northwest	Up to 75 feet	The earthquake caused subsidence in Northern Humboldt Bay, California. The earthquake was a megathrust event that involved the Juan de Fuca plate moving along a fault rupture that was about 1,000 kilometers long. The average amount of slip along the fault was 20 meters.
3/19/1855	Northern California	Humboldt Bay	Observed	Water in the bay agitated for 1 hour.
4/6/1943	Northcentral Chile	Crescent City	Trace	

Table 26. Tsunamis That Have Affected the North Coast of California.				
Date	**Origin of Tsunami**	**Impacted Areas**	**Run-up (meters)**	**Observations / Comments**
4/1/1946	East Aleutian Islands	Crescent City	1.0	3-foot amplitude and a 12-minute period were recorded for this event.
12/20/1946	Nankaido, Japan	Crescent City	0.2	
3/4/1952	Southeast Hokkaido, Japan	Crescent City	0.2	
11/4/1952	Kamchatka Peninsula, Russia	Crescent City	1.0	In Crescent City, 4 boats were overturned and concrete buoys were moved.
3/9/1957	Central Aleutian Islands	Crescent City	0.7	
5/22/1960	South/Central Chile	Crescent City	0.7	
10/13/1963	Kuril Islands, Russia	Crescent City	0.5	
3/28/1964	Gulf of Alaska	Crescent City	6.3	Waves arrived at Humboldt Bay approximately 20 minutes after shaking.
		Klamath River		One person killed and $4,000 in damages to dock and boats at Requa. Damage reported at least 2.7 from the mouth of the Klamath River.
		Trinidad		Observed run-up was 5.4 meters above mean lower low water.
2/4/1965	West Aleutian Islands	Crescent City	0.1	
10/17/1966	Peru	Crescent City	0.1	
5/16/1968	Honshu, Japan	Crescent City	0.6	
7/26/1971	New Ireland	Crescent City	<0.1	
10/3/1974	Peru	Crescent City	<0.1	
5/7/1986	West Aleutian Islands	Crescent City	0.1	
4/25/1992	Northern California Cape Mendocino	Humboldt Bay	0.3 observed	Waves arrived at Humboldt Bay about 20 minutes after ground shaking.
		Clam Beach	0.6	Water level changed several feet.
		Crescent City	0.9	Oscillations in harbor, the 4th set of waves were the highest recorded.
		Trinidad		Cars were stuck on the beach.

Table 26. Tsunamis That Have Affected the North Coast of California.				
Date	**Origin of Tsunami**	**Impacted Areas**	**Run-up (meters)**	**Observations / Comments**
9/1/1994	Northern CA Cape Mendocino	Crescent City	0.14	Recorded on Crescent City tide gauge 45 minutes after the earthquake.
11/15/2006	Kuril Islands, Russia	Crescent City	1.76	Recorded on Marigram.
		Arena Cove	1.18	
		Pt. Reyes	0.62	
01/13/2007	Kuril Islands, Russia	Crescent City	0.23	Recorded on Marigram.
		Arena Cove	0.25	
		Pt. Reyes	0.12	
3/11/2011	Honshu Island	Crescent City	2.47	$100 million in damages to the California maritime community.

5. Probability of Future Events on Trinidad Rancheria:

The 1700 Cascadia Subduction Zone Earthquake and Tsunami is the model for the catastrophic planning scenario in the Northwest. Because earthquakes occur in geological time, the next occurrence is difficult to predict. It could be immediately or many years into the future. As described in Section 9.4, the last Cascadia M 9.0 tsunami was 300 years ago and there have been more than 40 magnitude 8+ earthquakes over the last 10,000 years – approximately every 250 years. The recurrence interval for a Cascadia Subduction Zone M 9.0 Earthquake and Tsunami is estimated to be 500-600 years. The probability of such a massive quake in the next 50 years is about 12 percent, about 1 in 8, which is not insignificant. (InTeGrate, n.d.)

6. Vulnerability of Trinidad Rancheria:

Because the majority of the Rancheria lies above the tsunami zone, the greatest direct impact may be from the earthquake itself for a locally generated tsunami. However, as depicted in Figure 89, the entirety of Trinidad Harbor operations is at risk of inundation. Perhaps the greatest vulnerability is being isolated if Highway-101 is cut as expected.

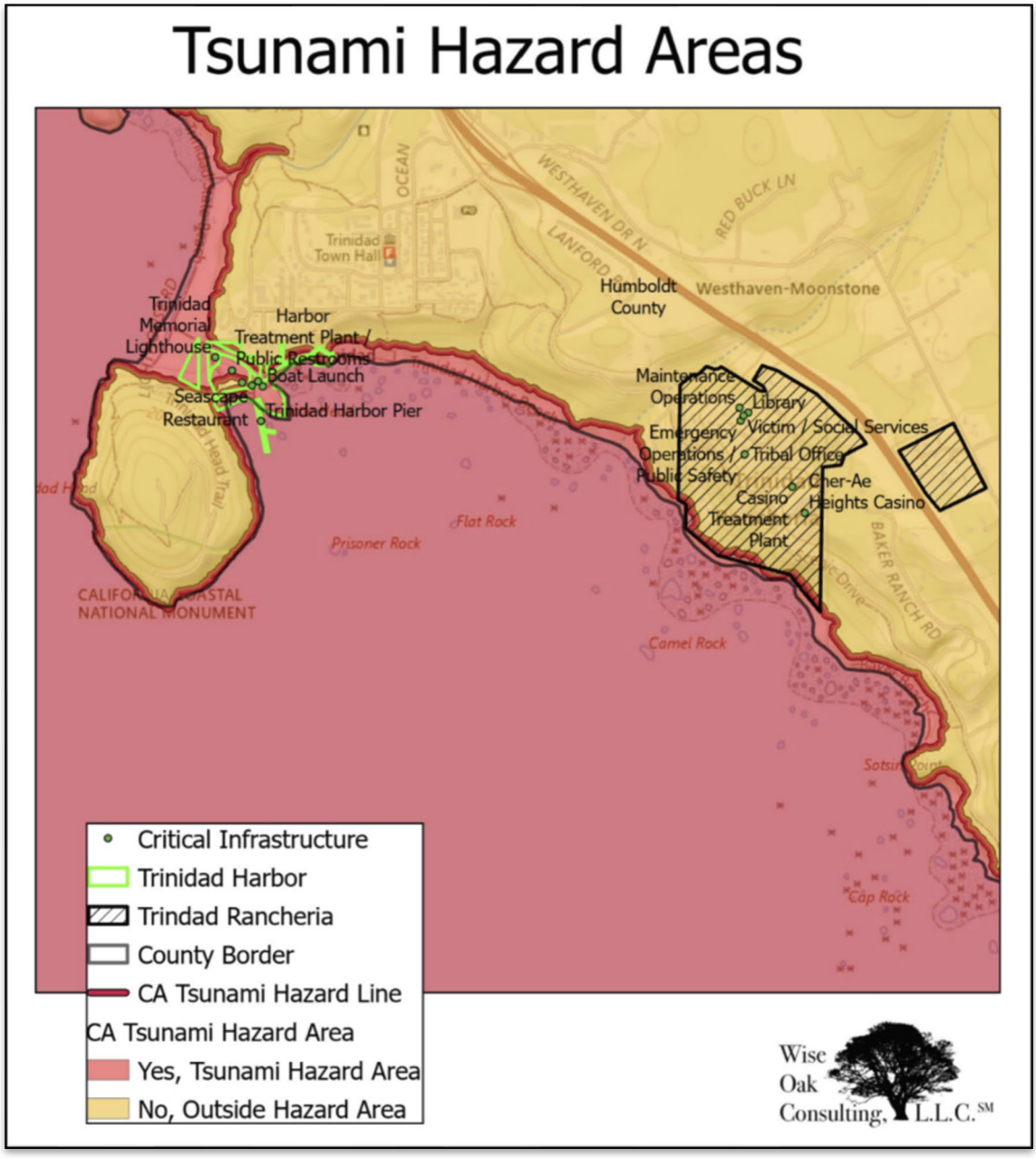


Figure 89. Tsunami Hazard Area.

7. Impact on Trinidad Rancheria:

During a tsunami, approximately 30% of the Tribe's residents would need to be evacuated. A catastrophic tsunami could cause loss of life, destroy homes, and greatly affect the Tribe's Trinidad Harbor Operations, Seascape Restaurant, and Seascape House enterprises. A tsunami can be expected to negatively affect other Trinidad City businesses, and impact tourism. Even if all residents and visitors were safely evacuated, the damage to property in this populated, high property value area would still be tremendous. In addition, Highway-101 can expect wash out at several locations both north and south of Trinidad Rancheria. Assistance to the Tribe and surrounding community will likely be delayed and interrupted.

A tsunami threatens $9.6 million in Trinidad Harbor assets and $2,600 per day in payroll. The loss of sea life is a threat to cultural resources and many, traditional activities. In addition to the tsunami generated, the Cascadia Subduction Zone Earthquake will cause Trinidad Rancheria to be impacted for an extensive amount of time as described in the earthquake hazard profile.

8. **Impact of Climate Change:**

There are five (5) ways that climate change can increase the threat of tsunamis. (Cunneen 2022)

- Sea level rise
- Landslides
- Iceberg calving and collapsing ice shelves
- Volcanic Activity from Ice Melting
- Increased Earthquakes

First, climate change leads to sea level rise. The sea level rise, in turn, increases the frequency and magnitude of flooding, including for tsunamis.

Second, wetter soil from more frequent and intense rainfall is less stable and more prone to slide either from the rain itself or triggered by such events as earthquakes. When those slides occur into or under water, tsunamis may result.

Third, wandering icebergs can trigger tsunamis far from the original iceberg source when they collide with unstable sediment on the seafloor. Climate change causes an increased number and frequency of iceberg calving – when ice falls into the ocean. This includes an increasing number and frequency of ice shelves collapsing.

Fourth, climate change may be causing more volcanic activity, leading to tsunamis.

Fifth, ice melting may relieve pressure that is holding fault movement. As massive glaciers melt and relieve that pressure, more earthquakes may result.

14. Wildland Fire

1. General hazard description:

Wildfires have been a part of the ecosystem for thousands of years. The National Weather Service (NWS) defines a wildfire as: "Any free burning uncontainable wildland fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment." (National Weather Service 2024) They can occur naturally, by human accident, or by intentional human action. They are often located far from human development with the exception of roads, power lines, and similar rural infrastructure. However, there is an ongoing threat to (and from) hikers, campers, and other people engaging in outdoor activities. Wildfires become particularly dangerous at the wildland-urban interface (WUI) - areas where structures and other human development meet or intermingle with undeveloped wildland.

The wildfire season in Humboldt County generally begins in June and typically ends in mid-October; however, wildfires have occurred in every month of the year. Drought, light snowpack, and local weather conditions can expand or shorten the length of the fire season. The early and late shoulders of the fire season are usually associated with human-caused fires. The peak months of July, August, and September are usually related to thunderstorms and lightning strikes.

Most wildfires occur without warning and spread quickly depending on factors as the level of moisture and available fuel based on the area's land use. The threat of wildfire and grass fires also increases in areas prone to intermittent drought or areas that are generally arid or dry.

Various factors have resulted in rapid development in the outlying fringe of metropolitan areas and in rural areas with attractive recreational and aesthetic amenities, especially forests, communities bordering forests and prairies where fires branch off. This demographic change is increasing the size of the wildland-urban interface. The WUI expansion has increased the likelihood that wildland and grass fires will threaten life and property.

The National Risk Index assesses the wildfire risk to be Relatively Moderate (Figure 90). Although heavily vegetated, with a history of logging, the area's wet coastal climate leads to damp conditions that makes it difficult for wildfires to start naturally and spread.

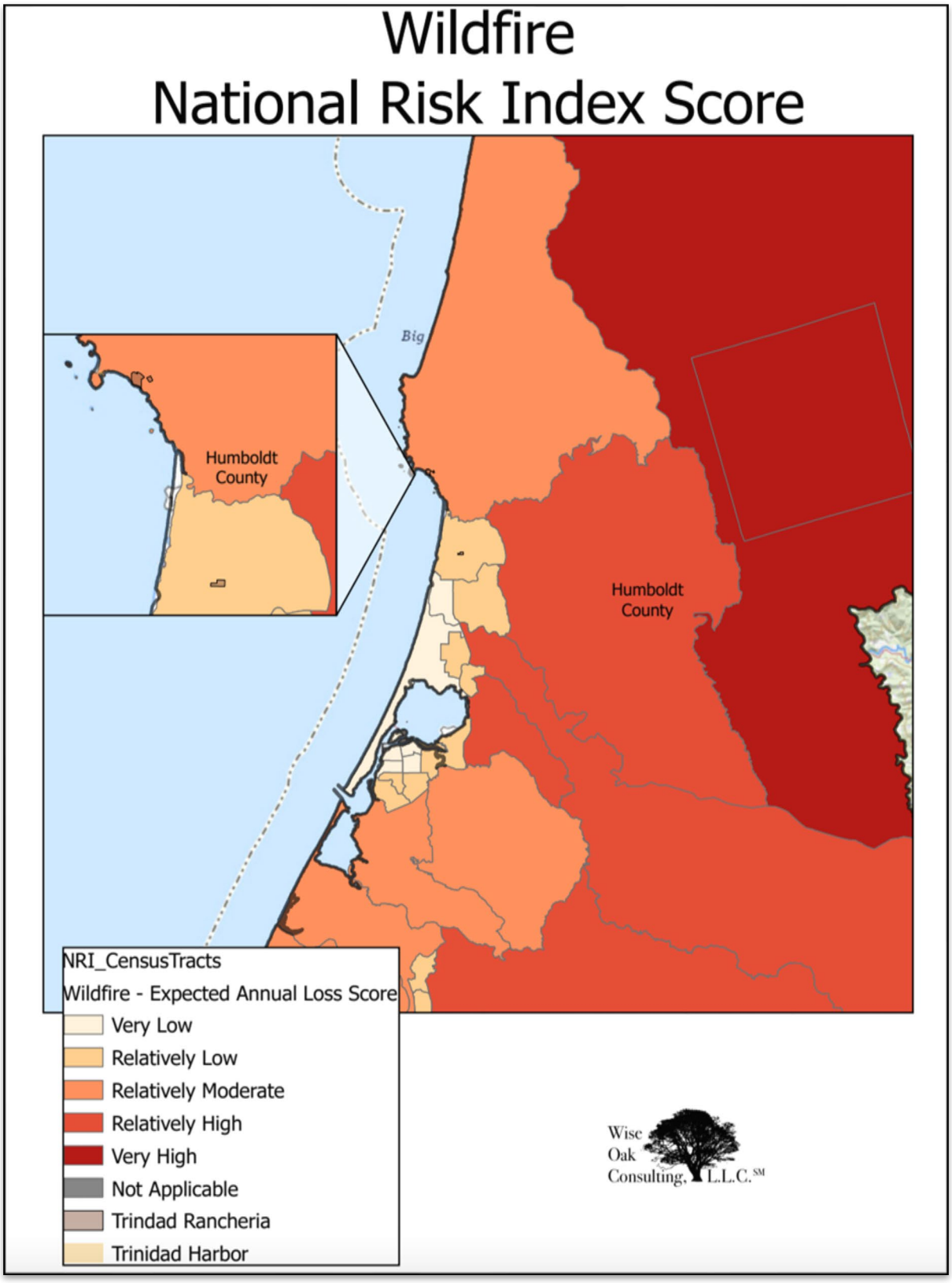


Figure 90. Wildfire National Risk Index Score.

Section II: Hazard Identification and Risk Assessment

Wildfires in California have been growing in size and impact as climate change has increased the risk. Nine (9) of the 10 largest wildfires in California history have occurred since 2017 – all in Northern California (Table 27).

Table 27. Ten (10) Largest Wildfires in the State of California.

Name	County	Acres	Start Date	Structures	Deaths
August Complex	Glenn, Lake, Mendocino, Tehama, Trinity, Shasta	1,032,648	August 16-17, 2020	935	1
Dixie	Butte, Lassen, Plumas, Shasta, Tehama	963,309	July 13, 2021	1,329	1
Mendocino Complex	Mendocino, Lake, Colusa, Glenn	459,123	July 27, 2018	280	1
Park	Butte, Tehama	429,603	July 24, 2024	637	0
SCU Lightning Complex	Santa Clara, Alameda, Contra Costa, San Joaquin, Merced, Stanislaus	396,624	August 16, 2020	222	0
Creek	Fresno, Madera	379,895	September 4, 2020	856	0
LNU Lightning Complex	Colusa, Lake, Napa, Sonoma, Solano, Yolo	363,220	August 17, 2020	1,491	6
North Complex	Plumas, Butte	318,935	August 17, 2020	2,352	15
Santiago Canyon	Orange, Riverside, San Diego	300,000	September 1889	0	0
Thomas	Ventura, Santa Barbara	281,893	December 2017	1,063	23

2. Location:

Due to all Rancheria lands being surrounded by forest, all sections of Trinidad Rancheria are at risk of wildfire. Trinidad Proper, the Westhaven Parcel, and the McKinleyville Parcel all lie in areas of reduced fire probability. The sporadic brush fires along coastal areas are typically small and burn less area as they are mostly fed by grass and brush versus heavily forested areas. Almost all fires in the area are caused by humans, primarily by logging related debris burns, as well as by campers and other recreational activities.

The heavily forested hills are nearly completely covered by some form of vegetation that could act as fuel for a fire. In addition, the steep terrain makes accessing wildfires difficult

Although wildland and grass fires can occur almost anywhere throughout the Reservation, the damp and humid climate conditions typically help prevent and contain wildfires. However, the planning area has been experiencing drier conditions since the development of its last HMP.

Wildland-urban interface zones exist throughout Humboldt County but are generally more common along the coastal and river basins.

Figure 91 is a map showing the wildfire potential and historical fire locations for the region. While the National Risk Index Score is Relatively Moderate, the entire planning area is clearly at risk to Wildfire.

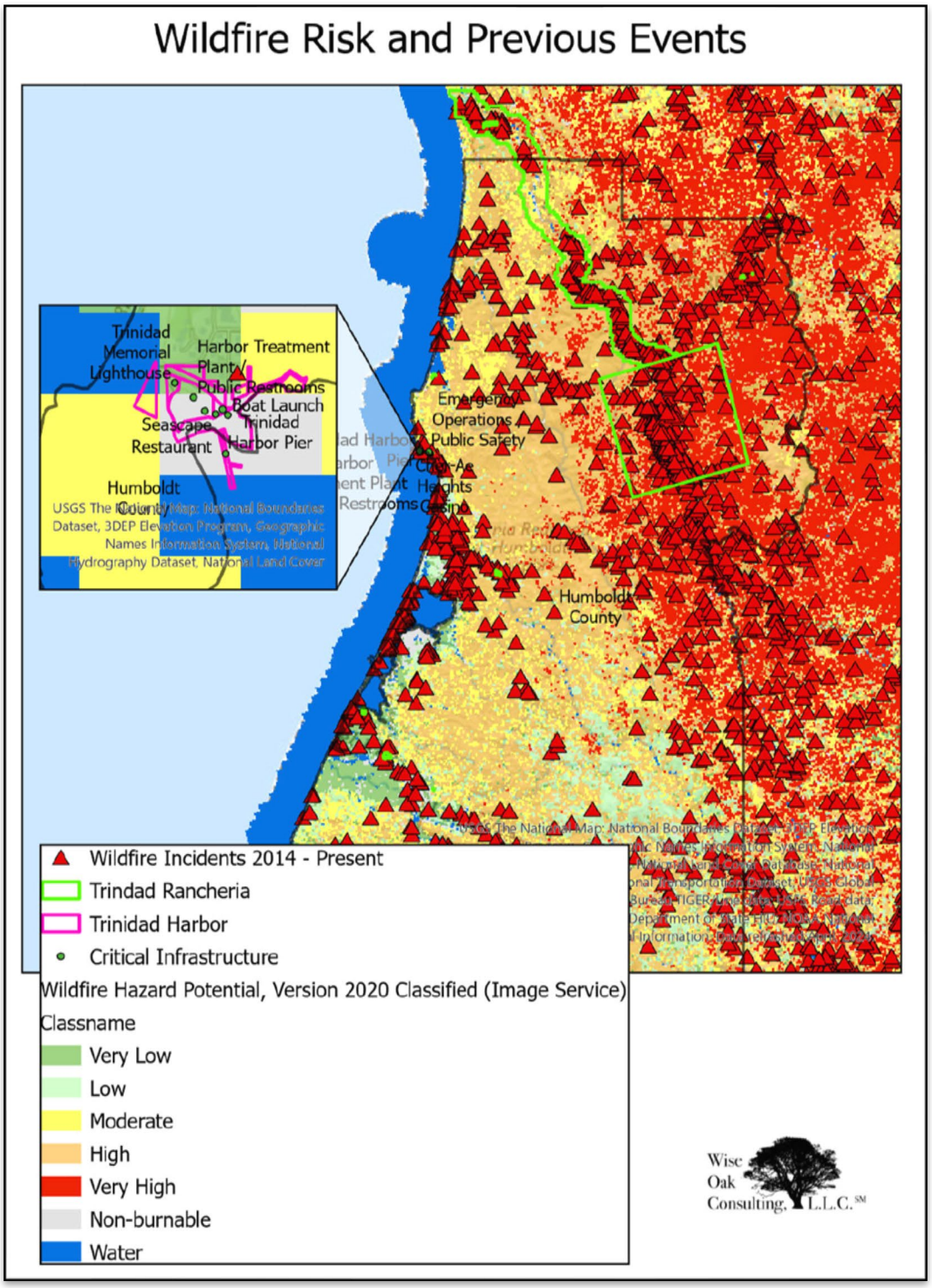


Figure 91. Wildfire Risk to Communities Burn Probability.

3. **Extent:**

Climate factors place the Main Parcel, Westhaven, and McKinleyville in a Moderate Hazard Severity Zone (Figure 92). (Humboldt County, CA, 2019, pp. 2-7)

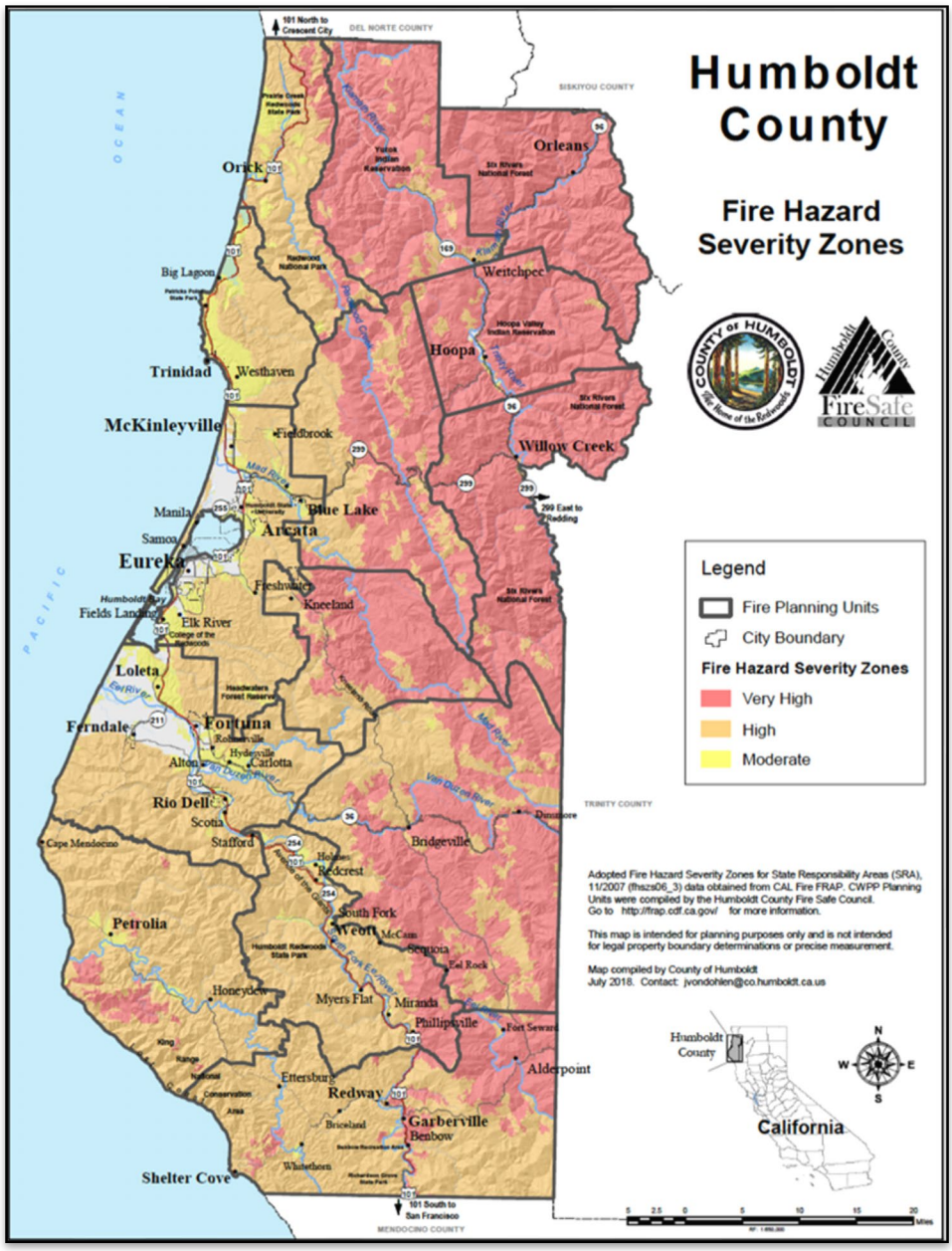


Figure 92. Humboldt County Fire Hazard Safety Zones.

While there is a relatively low wildfire hazard surrounding Trinidad Rancheria, the 2019 Humboldt County Wildfire Protection Plan notes that many coastal homes have an abundance of fire fuels surrounding them due to the belief that the wildfire risk is low. (Humboldt County, CA,

2019, pp. 2-6) These fuels include not only vegetation, but also items such as stacked firewood, patio furniture, and other manmade items. As a result, the Wildfire Protection Plan assesses a high to very high level of fuels surrounding homes. The lack of defensible space around homes, combined with their construction and associated fire fuels, presents a very real wildfire risk to Tribal homes.

4. Previous Occurrences on Trinidad Rancheria:

Fire has been a significant factor in Humboldt County's history. Evidence of this can be seen in the fire scars on ancient redwoods, some dating back more than a thousand years. Despite the generally damp climate prevailing in these forests, studies have suggested there is a historical fire return interval of 50 to 100 years in the northern part of the county and 12 to 50 years in the south. Several of the more destructive historical fires occurred on the coast around the Trinidad area, including the 7,432-acre Luffenholz Fire of 1908, the 17,527-acre A-Line Fire of 1936, and a 15,000-acre unnamed fire near Patrick's Point in 1945. Figure 93 depicts the fire perimeters for the planning area from 1908 through 2023. Note that the McKinleyville Parcel lies in the footprint of the 1908 Luffenholz Fire.

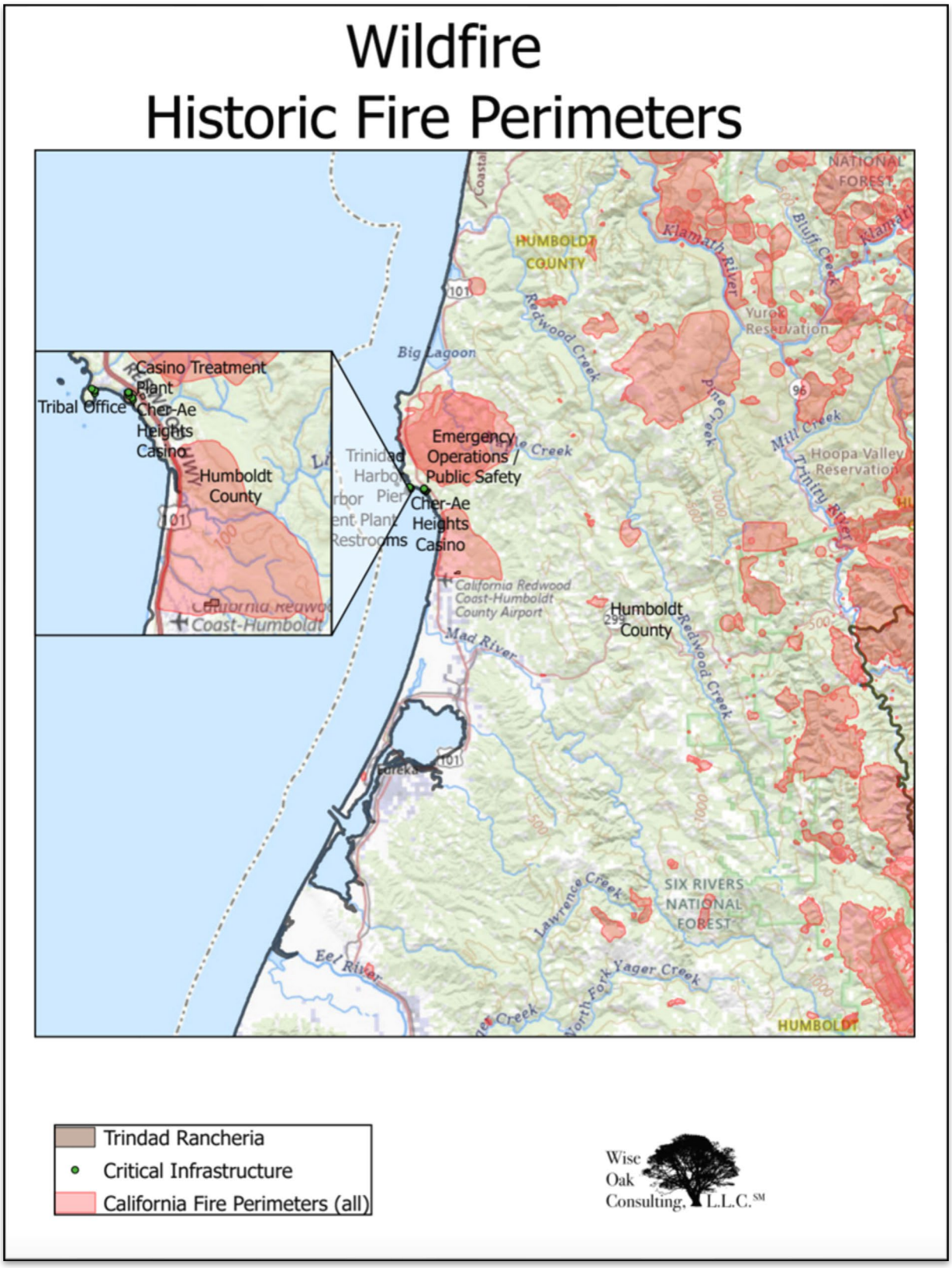


Figure 93. Wildfire Historic Perimeters.

Figure 94 depicts wildfire incidents since 2014. While not every fire increases in size to cause a large fire perimeter as in Figure 92, they are occurring throughout the planning area.

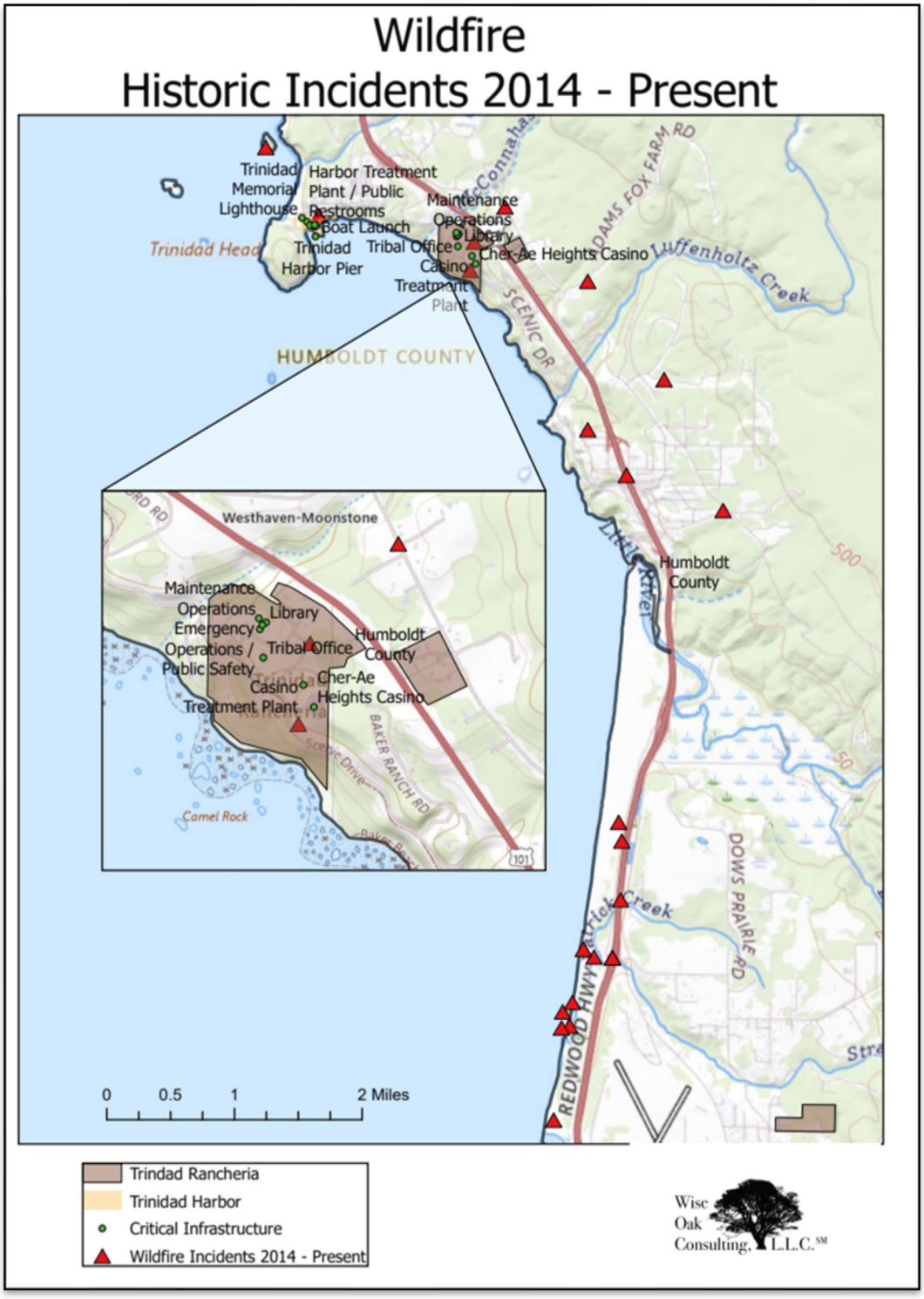


Figure 94. Wildfire Historic Incidents 2014 - Present.

All structures on the Main Parcel, Westhaven Parcel, and McKinleyville Parcel are susceptible to wildfire damage/destruction. Typically, western Humboldt County's wildfire season is shorter than the eastern half for several reasons:

a. The western half of the county receives more rainfall.

b. The West has spring seasons that are wetter and cooler than the East.

c. Temperatures in the eastern portion of the county are much higher in the summer months, and much of the precipitation received in the east falls as snow during the winter.

As with much of California, Humboldt County has a long history with wildfires, that appears to be growing in intensity along with other climate change-induced extremes in weather phenomena.

5. Probability of Future Events on Trinidad Rancheria:

The National Risk Index Annualized Frequency assesses the entire County to have 0.008 events per year. While this is very low, Figure 95 depicts the wildfire risk to communities burn probability. All of the Trinidad Rancheria parcels lie within regions of relatively low to very low burn probability. However, due to all Rancheria lands being surrounded by forest, all sections of Trinidad Rancheria are at risk of wildfire.

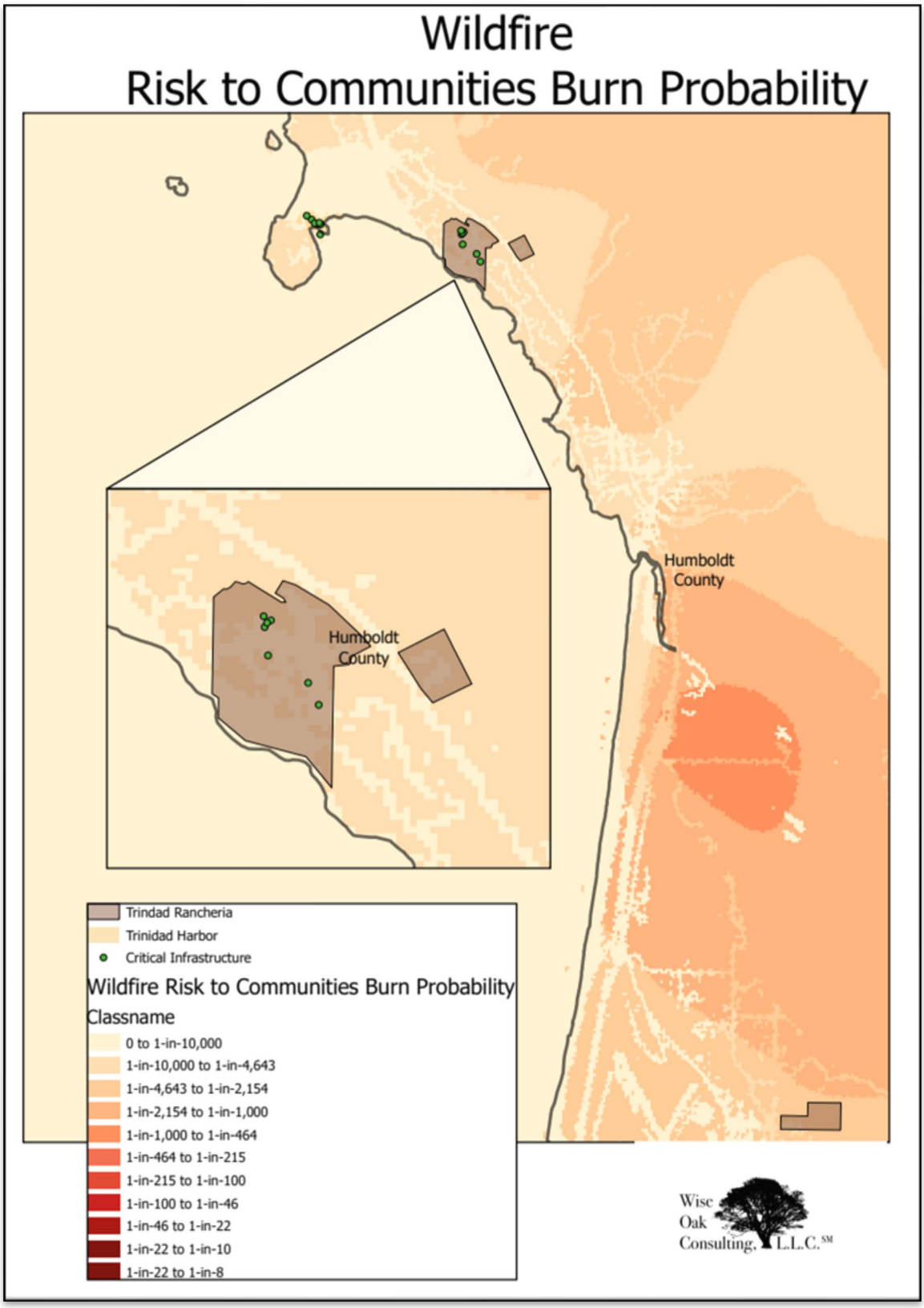


Figure 95. Wildfire Risk to Communities Burn Probability.

6. Vulnerability of Trinidad Rancheria:

While small fires typically cause little damage, a catastrophic fire such as the Camp Fire could lead to a total loss. Total exposure for Trinidad Rancheria to wildfire is more than $35 million in 2024 insured value, excluding The Heights Casino.

7. Impact on Trinidad Rancheria:

Wildfire could result in catastrophic damage and an extensive amount of time for recovery. A total loss similar to the 2018 Camp Fire in California would be $35 million in assets, $20,000 per day in lost payroll, and $2,000 per day in lost net revenue.

8. Impact of Climate Change:

Climate change is expected to bring hotter, drier summers (as well as wetter winters) to the Trinidad Rancheria area. This could increase the fuels and conditions for an increased number and size of wildfires.

With the expected increase in temperatures, decrease in summer precipitation and streamflow, and change in vegetation, the U.S.E.P.A. assessed an increase in acres burned of between 3-10 acres between the timeframes of 1984-2001 and 2002-2018 (Figure 96). With expected rising temperatures and less summertime water for vegetation, the Tribe can expect an increase in future wildfires.

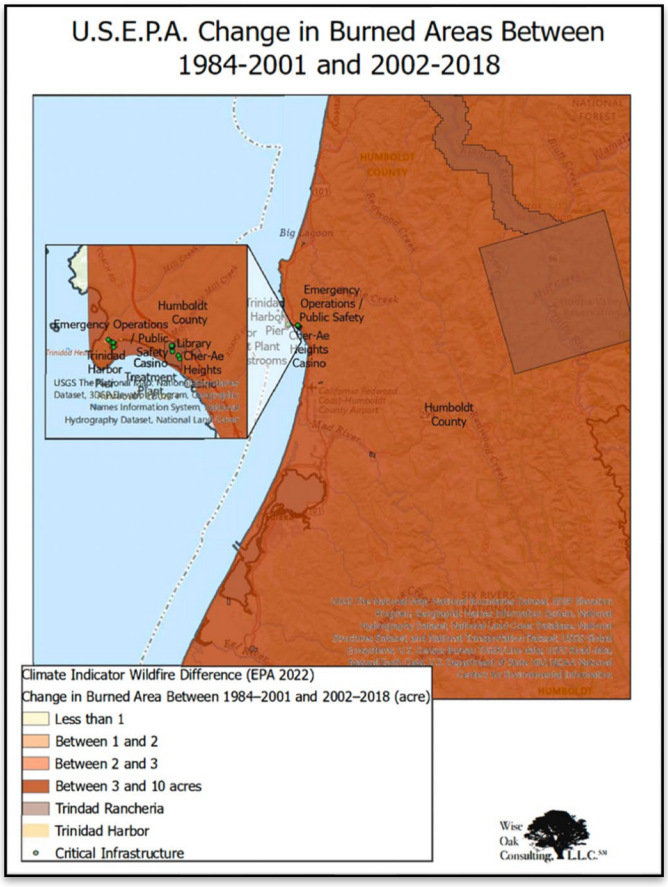


Figure 96. U.S. EPA Climate Indicator for Wildfire.

Section II: Hazard Identification and Risk Assessment

D. Technological Hazard Analysis

Technological Hazards - accidents or the failures of systems and structures

i. Power Failure
ii. Hazardous Materials (HAZMAT) Release – Marine
iii. Structure Fire
iv. Transportation Accident
v. Hazardous Materials (HAZMAT) Release – Marine

While technological hazards are optional and not evaluated by FEMA as a part of Hazard Mitigation Planning reviews, Trinidad Rancheria is including the Tribe's basic assessment of them in its Hazard Mitigation Plan to better integrate the HMP with all elements of the National Preparedness System. Technological Hazards are fully assessed in Trinidad Rancheria's XX Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR). The same process for identifying and assessing natural hazards was used for technical hazards. The results are in Table 28.

Table 28: Trinidad Rancheria's Technological Hazards of Greatest Concern.

Hazard	Location	Extent	Probability	Concern	Sum	Rank
Power Failure	39	48	56	57	200	1
HAZMAT Release - Marine	35	44	44	54	177	2
Structure Fire	33	42	34	47	156	3
Transportation Accident	25	37	43	47	152	4
HAZMAT Release - Land	27	40	35	45	147	5

1. Power Failure

1. General hazard description:

Due to its relatively remote location and absence of redundant infrastructure, Humboldt County and Trinidad Rancheria are susceptible to utility disruptions from several causes. Natural hazards such as severe storms can result in power failure due to downed power lines. Weather associated with excessive heat can also lead to power disruption at the time when it is needed most. Pacific Gas and Electric (PG&E) will shut off power in one or more of its extreme or elevated fire-risk zones when certain environmental conditions are met, and a risk evaluation is done with guidance from local emergency management teams and other stakeholders. This helps prevent power lines, objects that are blown into power lines, and other equipment from causing a wildfire.

2. Location:

A major power failure could disrupt the power supply to the entire county. The cascading effects of a power failure can be loss of other essential infrastructure such as communications, water, wastewater, fuel, etc. The California Public Utilities Commission (CPUC) has sorted regions according to their wildfire risk. Homes and businesses in Tiers 2 and 3 wildfire risk areas are more likely to experience a PSPS.

- **Tier 2:** An area where there is an elevated risk of wildfire.
- **Tier 3:** An area where there is an extreme risk of wildfire.

As can be seen in Figure 97, Trinidad Rancheria does not lie within a Tier 2 or Tier 3 area. The Rancheria's greater threat to loss of power may be from severe winter storms.

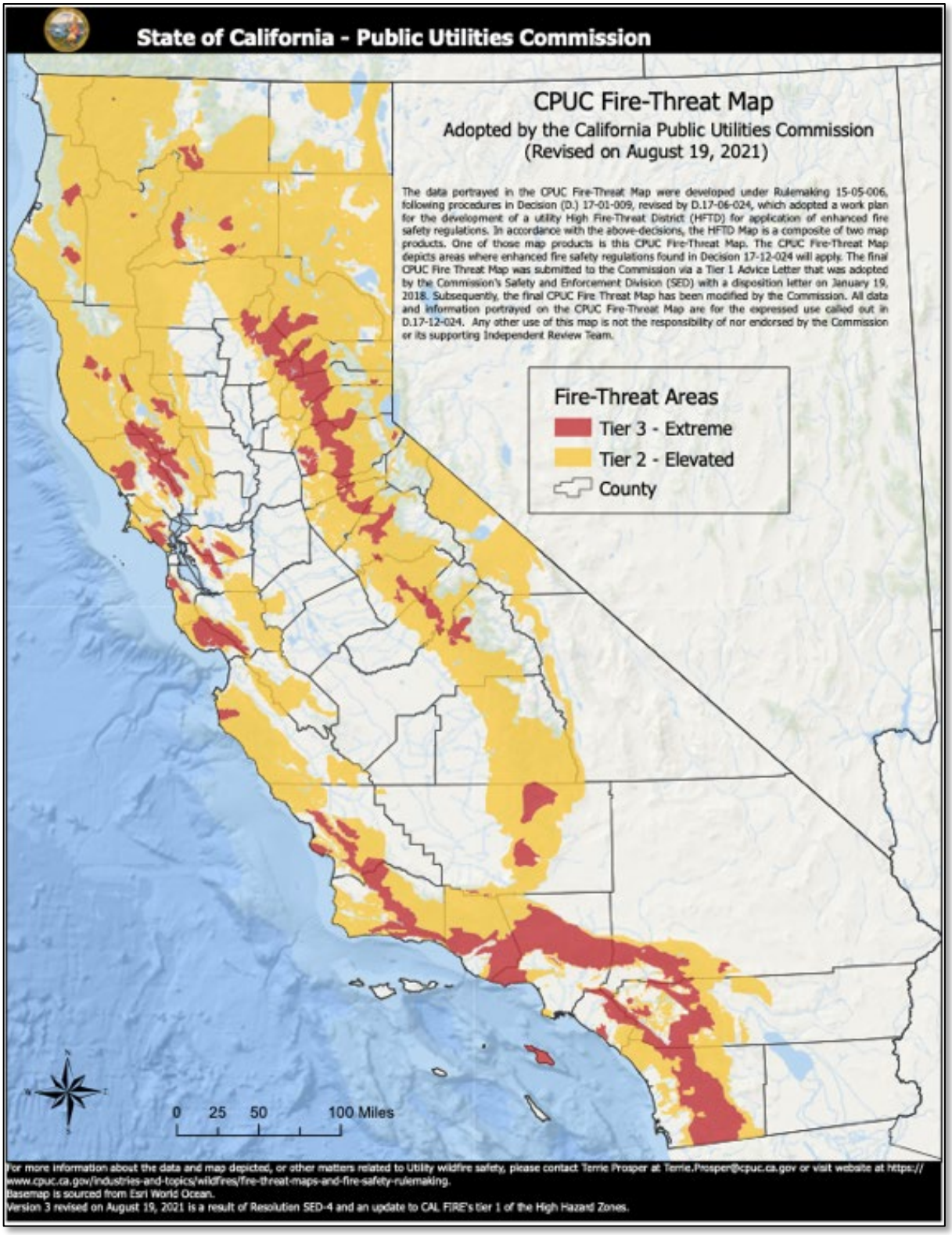


Figure 97. California Public Utilities Commission Fire Threat Map.

3. Extent:

The extent of a utility disruption ranges from a momentary disruption to a persistent loss from a disaster destroying infrastructure or even a human-caused network attack. As described in "Location," the worst case would lead to cascading effects such as the loss of other essential infrastructure such as communications, water, wastewater, fuel, etc.

The Rancheria's context statement from its 2023 Threat and Hazard Identification and Risk Assessment (THIRA) is:

During March, heavy snowfall in the Klamath Mountains followed by heavy rains have resulted in flash flooding, mudslides, and landslides. Power poles/lines are down throughout Humboldt County, leaving Trinidad Rancheria without power for 30 days. During a major concert at the Heights event hall, with just 30-minutes of warning, the clogged culverts for Cher-Ae Creek and McCannahos Mill Creek have caused flooding in The Heights Casino parking lot, the RV parking, and around Tribal Operations. Five hundred employees and customers of the casino and Sunset Restaurant are ordered to evacuate. One hundred employees and guests of The Heights Casino/Sunset Restaurant are cutoff and stranded before evacuating. The slide area along Cher-Ae Lane completely gives way, also cutting off access to Tribal Operations. There are reports of people being swept away who were walking along Cher-Ae Creek from the Westhaven Housing area. Already weakened areas along Scenic Drive have slid, further cutting off everyone in the Main Parcel, including the 24 households (59 residents). In all, 11 minors, 10 people over 65, 7 people with disabilities and access and functional needs, 7 people who speak English as a second language, and 9 economically disadvantaged people are affected. The road washouts prevent the Tribe from bringing generators down to Trinidad Harbor. Storm-induced power failures leave Trinidad Rancheria Harbor Operations without power and other utilities for 30 days.

The area of erosion on the ocean side of the casino suffers a major slide resulting in the loss of propane storage and threatening the water treatment facility.

The estimated economic impact due to revenue loss over 30 days of closure exceeds $90,000 ($3,000 per day).

Four jurisdictions are affected (Trinidad Rancheria, City of Trinidad, State of California, Federal Government). Four partner organizations including non-profit, volunteer, faith-based, and private sector organizations were also affected.

4. **Previous Occurrences in Trinidad Rancheria:**

Limited utility outages are becoming increasingly common with the PG&E Public Safety Power Shutoff program when power is regularly shut off in one or more of its extreme or elevated fire-risk zones if certain environmental conditions are met. This proactive approach helps prevent wildfires. Major storms often cause power outages due to lines failing in wind, especially with the saturated ground during severe winter storms. In addition, power failures are caused by accidents such as vehicles striking power poles.

5. **Probability of Future Events on Trinidad Rancheria:**

Utility failures are a certainty – whether planned or unplanned. The variables are when, how big, and for how long.

6. **Vulnerability of Trinidad Rancheria:**

Because the Reservation lies at the end of a distribution network, essentially any upstream interruption results in a power failure. With the McKinleyville Parcel being in a different distribution zone than the Main Parcel and Trinidad Harbor, they can be vulnerable to different power outage situations.

7. **Impact on Trinidad Rancheria:**

The immediate and most important impact is that some vulnerable Tribal members may need immediate assistance with emergency power, water, food, or other commodities. The Rancheria must keep a roster of those who require immediate assistance with the loss of utilities. Critical facilities such as IT infrastructure, The Heights Casino, and Tribal Operations require uninterrupted power to fully function.

While the Rancheria has been able to acquire emergency generators for its critical facilities via mitigation grants, perhaps the greatest current impact is to vulnerable populations who require uninterrupted power in their homes.

8. **Impact of Climate Change:**

Climate change impacts due to weather effects are addressed in their respective sections.

The impact of climate change is indirect but significant. As the climate changes, it results in more frequent and more severe storms that can destroy infrastructure through downed power lines, slides, etc. This is of particular concern during the winter storm season. As the wildfire risk increases, utility providers increasingly conduct pre-emptive safety power shutoffs when

conditions reach dangerous levels. As the impact of climate change increases in the coming decades, the need for even more redundancy will grow.

2. HAZMAT Release - Marine

1. General hazard description:

Hazardous materials are substances that pose a significant risk to life or to the environment. Environment includes surface water, groundwater, drinking water supply, land surface, subsurface strata, ambient air, dry gullies, and storm sewers that discharge to surface waters. Hazardous materials are substances that may be toxic, reactive/oxidizing, corrosive, flammable/combustible, radioactive, or explosive. Incidents involving hazardous materials can result in the evacuation of a few people to entire communities. Costs associated with hazardous material releases can easily run into millions of dollars for damages and cleanup.

An example of a marine oil spill external to Trinidad Rancheria that could affect it occurred in Huntington Beach on October 1, 2021. A mystery oil sheen was observed about three and a half miles off Huntington Beach, California. The source was later determined to be a leak from pipeline P00547, associated with the offshore platform "Elly" owned by Beta Offshore, a subsidiary of Amplify Energy. The pipeline may have sustained damage from a ship's anchor .

2. Location:

While the entire coastline can be affected by a major offshore oil spill, the location of greatest concern is Trinidad Harbor – an Area of Special Biological Significance (ASBS). Trinidad Rancheria is responsible for maintaining the pristine nature of the harbor. As such, it installed a system to catch all water runoff from the parking lot and the pier; the project was funded by Federal grants.

3. Extent:

While a catastrophic offshore HAZMAT release is of concern, the more immediate hazard is a smaller HAZMAT spill that can occur on any given day; the Rancheria needs the capability to control and cleanup.

The Rancheria's context statement from its 2023 Threat and Hazard Identification and Risk Assessment (THIRA) is:

During a winter night with a sold-out concert, a fuel truck overturns on Highway-101 as it passes the Main Parcel. The fuel catches fire and burning fuel flows downhill in the vicinity of The Heights Casino. Light, offshore winds blow the smoke toward The Heights Casino, resulting in the need to quickly evacuate and/or shelter in place. More than 1,000 guests are in attendance, 150 employees, and 81 Tribal members in the Main Parcel and Westhaven Housing are affected. Of those, 189 are minors, 172 are over 65, 125 have disabilities / access and functional needs,

and 118 speak English as a second language. Fifty people (9 minors, 9 over 65, 6 with disabilities, and 6 that speak English as a second language) are treated for respiratory injuries. The Heights Casino/Sunset Restaurant is closed for 7 days for decontamination, resulting in $21,000+ in lost revenue. Four jurisdictions are affected (Trinidad Rancheria, City of Trinidad, State of California, Federal Government). Four partner organizations include non-profit, volunteer, faith-based, and private sector organizations are affected.

4. **Previous Occurrences on Trinidad Rancheria:**

To date, the Tribe has had minor HAZMAT spills that have been easily contained and cleaned up. There have been boating accidents, including collisions in the local waters that resulted in small spills. One example of how easily small spills occur was from an individual who launched his boat from the beach (uncontrolled and allowed) and the owner's vehicle got stuck in the water. The result was a small HAZMAT incident.

5. **Probability of Future Events on Trinidad Rancheria:**

HAZMAT spills are a certainty. As described in Previous Occurrences, small boat and vehicle operators are certain to cause spills in the future.

The U.S. Department of Transportation has recorded more than 900 water HAZMAT incidents and more than 480,000 highway HAZMAT incidents since 1975. The incidents were responsible for more than 380 highway fatalities and three (3) water fatalities. The highway incidents resulted in more than $1.4 billion in property damages, and the water incidents resulted in more than 12.8 million in property damages. (Bureau of Transportation Statistics, 2019)

The use of chemicals for such functions as wastewater treatment presents a risk of small-scale HAZMAT incidents. Transportation of HAZMAT trucks on Highway-101 presents a risk of a major HAZMAT accident. Accidents are a part of life so a HAZMAT spill is almost certain; it is just a matter of how big and where. At the height of fishing/crabbing seasons, the number of boats in a small area increases greatly, resulting in a higher probability of an accident.

In short, while the probability of a catastrophic HAZMAT-related accident is relatively low, lesser accidents occur more often.

6. **Vulnerability of Trinidad Rancheria:**

Because accidents happen, Trinidad Harbor is at risk for a HAZMAT spill on any given day. While a disruption impacts revenue, natural resources are also at risk. With respect to native natural and cultural resources, a marine oil spill first threatens traditional fishing, hunting, and gathering. Large populations of wildlife can be severely impacted or destroyed. Wetlands

protect many species and act as a buffer between the ocean and human development. As the Rancheria builds out its interpretive center at Trinidad Harbor, those operations may be impacted in the future.

7. Impact on Trinidad Rancheria:

The impact could be as little as a temporary disruption in operations while a spill is contained and cleaned up. The impact could be as large as a HAZMAT cloud that covers a parcel, causes casualties, and interrupts Tribal and enterprise operations.

A marine HAZMAT spill would disrupt disrupting the Rancheria's largest source of non-gaming revenue. As described in the THIRA context statement, a 43-foot fishing boat sinking and a 200-gallon fuel leak into the harbor and along the shoreline could result in birds, sea mammals, and countless fish casualties. If Trinidad Harbor closed for an extended time, it could result in a revenue loss of over $100,000. A simple disruption of operations of Trinidad Harbor represents a loss of $2,600 per day in payroll.

8. Impact of Climate Change:

Climate change is not a significant factor.

3. Structure Fire

1. General hazard description:

"Simple" structure fires can occur at any time. Fires in homes are most often caused by cooking accidents, smoking, or unsafe use of woodstoves or space heaters. In 2024, the State of California saw 107 home fire fatalities and four (4) firefighter fatalities. (U.S. Fire Administration, 2024) Of particular note, California saw 1.2 deaths and 3.0 injuries per 1,000 fires in all fires in 2022 but 5.0 deaths and 14.8 injuries per 1,000 fires in residential structures. (U.S. Fire Administration, 2024) The upshot is that structure fires are an ongoing concern year around and are essentially four (4) times as lethal in-home fires than structure fires in general.

When wildfires result in disastrous property losses they are referred to as "Wildland-Urban Interface" (WUI) fires, or simply "interface fires." These fires may start as small vegetation fires in cities like Oakland and Los Angeles miles from "wildlands," or be a part of large brush and forest fires. They usually happen on days of especially extreme weather conditions when wildfires threaten so many houses at once that California's vast system of cooperative fire protection is overwhelmed. The three primary components required to reduce interface fire losses are:

1) Building construction methods that reduce the hazard of building ignition.

2) Defensible Space to reduce hazardous vegetation around houses and reduce the potential severity of wildfire exposure.

3) Identification of areas where there is a significant risk of interface fires and a history of such disastrous losses.

2. Location:

While every structure is at risk, different types of structures have different causes:

- General enterprises / Tribal critical infrastructure – electrical equipment, faulty wiring, overloaded circuits are a leading cause of fires.
- Trinidad Harbor – multiple fire hazards from fueling operations to the kitchen.
- Tribal Operations, Seascape Restaurant, Heights Casino, and Sunset Restaurant; Social Services – general electrical equipment and kitchens.
- Tribal homes – cooking is the leading cause of home fires.
- All facilities – arson.

3. **Extent:**

While any structure is at risk of fire, the increase in Wildfire risk with climate change will increase the risk of wildland urban interface (WUI) fires in each housing parcel of structures. Structures will be more at risk to wildland fire, but structures will also present a greater fire hazard due to being in close proximity to more fuels.

4. **Previous Occurrences on Trinidad Rancheria:**

Fortunately, structure fires have been few and far between. However, wet winters and drier summers are increasing the fuels near homes.

5. **Probability of Future Events on Trinidad Rancheria:**

Accidents happen. Whether in a home, one of the kitchens, or any number of facilities, structure fire is likely. In addition, there is also the possibility of arson from a disgruntled staff member, patron, the public, or even a Tribal member.

6. **Vulnerability of Trinidad Rancheria:**

Trinidad Rancheria has a small population on a small reservation. Again, every loss is significant – even more so for irreplaceable cultural artifacts. A fire that destroys the artifacts would be devastating. While structure fires are typically limited in scope, events such as the Camp Fire in Paradise, California, demonstrate that whole communities can be lost when the cause is wildfire.

One current area that is especially venerable are the facilities at Trinidad Harbor. Due to the nature of the water supply from the Town of Trinidad, there is very low water pressure at Trinidad Harbor. While it may be an inconvenience during normal operations, it could prove catastrophic should there be a fire and there is insufficient water pressure to extinguish it.

An emerging vulnerability is the Tribe's planned seven-story hotel. The Tribe needs the capability to reach all floors with a ladder truck either through mutual aid or with an organic fire department.

Again, the limited enterprise resources mean the loss of any is a significant cost and loss of income. Most importantly, the small Reservation population means the loss of anybody due to structure fire or otherwise is significant.

Overall, the greatest vulnerability is the lack of an organic fire management and suppression capability. The Tribe is reliant on external partners.

7. **Impact on Trinidad Rancheria:**

The impact of every structure fire is significant. While single home fires in the City of Eureka may go unnoticed by many, with only 44 homes, every loss due to fire (or any reason) has a significant impact on the housing stock. Similarly, the Tribe does not have a tax base like a city would. It relies upon revenue generated by its enterprises. Beyond the cost of rebuilding, every day that an enterprise does not function is a loss of revenue.

8. **Impact of Climate Change:**

The impact of climate change on Wildfire is described that hazard profile. Climate change is not a significant factor for general structure fires.

4. Transportation Accident

1. General hazard description:

Transportation accidents range from fender benders to multi-vehicle accidents to highway HAZMAT spills (covered in a separate hazard profile). Highway-101 separates the Main Parcel from the Westhaven Parcel. High speed accidents can impact either parcel. More directly, the road access to the Main Parcel can be considered poor. Scenic Drive is narrow, poorly maintained in the Humboldt County segment, and subject to annual flooding and slides. There are no streetlights along roads accessing and on Tribal property. Periodic high-volume traffic frequenting The Heights Casino can increase the probability of accidents. In addition, the narrow road lacks a shoulder and pedestrians are often in the roadway.

2. Location:

All Tribal roads are susceptible to transportation accidents. However, the area of greatest concern is Scenic Drive. The combination of poor conditions and higher utilization (sole access to Trinidad Rancheria Proper and The Heights Casino), makes it the location of most concern.

3. Extent:

The greatest concern from a basic traffic accident perspective is an accident involving a bus – either a casino shuttle bus or other commercial bus that could be involved in a highway accident or even leave Scenic Drive.

The Rancheria's context statement from its 2023 Threat and Hazard Identification and Risk Assessment (THIRA) is:

During a winter night with a sold-out concert, a fuel truck overturns on Highway-101 as it passes the Main Parcel. The fuel catches fire and burning fuel flows downhill in the vicinity of the casino/hotel. Light, offshore winds blow the smoke toward The Heights Casino resulting in the need to quickly evacuate and/or shelter in place. More than 1,000 guests are in attendance, 150 employees, and 81 Tribal members in the Main Parcel and Westhaven Housing are affected. Of those, 189 are minors, 172 are over 65, 125 have disabilities / access and functional needs, and 118 speak English as a second language. Fifty people (9 minors, 9 over 65, 6 with disabilities, and 6 that speak English as a second language) are treated for respiratory injuries. The Heights Casino/Sunset Restaurant is closed for 7 days for decontamination - $21,000+ in lost revenue. Four jurisdictions are affected (Trinidad Rancheria, City of Trinidad, State of California, Federal Government). Four partner organizations include non-profit, volunteer, faith-based, and private sector organizations are also affected.

4. **Previous Occurrences on Trinidad Rancheria:**

Trinidad Rancheria has been and will continue to be affected by traffic collisions. In order to overcome the challenge of under-reporting on Tribal land and to ensure that decisions are grounded in accurate data, the Rancheria is creating a Crash Data Base. This database will collect and catalog all crash data. The collection of this data will not only help in refining the correlation between recent crash patterns and potential emphasis areas, but it will also strengthen the Tribe's ability to advocate for needed infrastructure improvements and safety measures. By building a comprehensive, data-driven foundation, the Rancheria can implement more effective safety interventions that prioritize the well-being of its community members.

5. **Probability of Future Events on Trinidad Rancheria:**

Roadway crashes are a certainty. The only question is the size and impact that any given one may have. The Trinidad Rancheria's proactive approach to addressing transportation safety on Tribal lands aims to rectify the issue of under-reporting crashes and enhance data-driven decision-making. By implementing a Comprehensive Safety Action Plan (CSAP), the Rancheria is taking a holistic approach to safety that considers crash patterns, community input, and past planning efforts. This initiative will help in developing targeted safety measures based on accurate and up-to-date data.

6. **Vulnerability of Trinidad Rancheria:**

With US Highway-101 bisecting Rancheria parcels and generally poor road conditions, every portion of Trinidad Rancheria can be considered vulnerable to roadway crashes. In the McKinleyville Parcel and Trinidad Harbor, the crashes are likely be from slow-speed incidents. However, the Main Parcel and the Westhaven Parcel are also vulnerable to the impact of incidents on US Highway-101.

7. **Impact on Trinidad Rancheria:**

Any traffic incident that results in an injury or death is a tragedy. Beyond injuries and deaths, traffic incidents can interrupt operations and even leave the Rancheria open to financial liability. Transportation accidents can cut access to Tribal services and enterprises such as The Heights Casino. Economic impacts could be $3,000 per day in lost revenue.

8. **Impact of Climate Change:**

The Trinidad Rancheria transportation system faces significant challenges due to the impacts of climate change, from rising sea levels and extreme weather events to wildfires and temperature fluctuations. Proactive planning and investment in climate-resilient infrastructure, better

maintenance strategies, and enhanced emergency response systems are critical for ensuring the continued safety, mobility, and accessibility of the transportation network. By integrating climate change adaptation strategies into the Rancheria's transportation planning and safety initiatives, the Tribe can better protect its community from future disruptions.

5. HAZMAT Release - Land

1. General hazard description:

Hazardous materials are substances that pose a significant risk to life or to the environment. Environment includes surface water, groundwater, drinking water supply, land surface, subsurface strata, ambient air, dry gullies, and storm sewers that discharge to surface waters. Hazardous materials are substances that may be toxic, reactive/oxidizing, corrosive, flammable/combustible, radioactive, or explosive. Incidents involving hazardous materials can result in the evacuation of a few people to entire communities. Costs associated with hazardous material releases can easily run into millions of dollars for damages and cleanup.

One of the most devastating HAZMAT rail accidents in recent history occurred in East Palestine, Ohio, on February 3, 2023. Thirty-eight (38) tanker cars,11 with hazardous materials, derailed, caught fire, and exploded.

2. Location:

Figures 98-100 map California Emergency Protection Agency (Cal EPA) regulated sites for the planning area as a whole, northern Rancheria parcels, and Trinidad Harbor respectively.

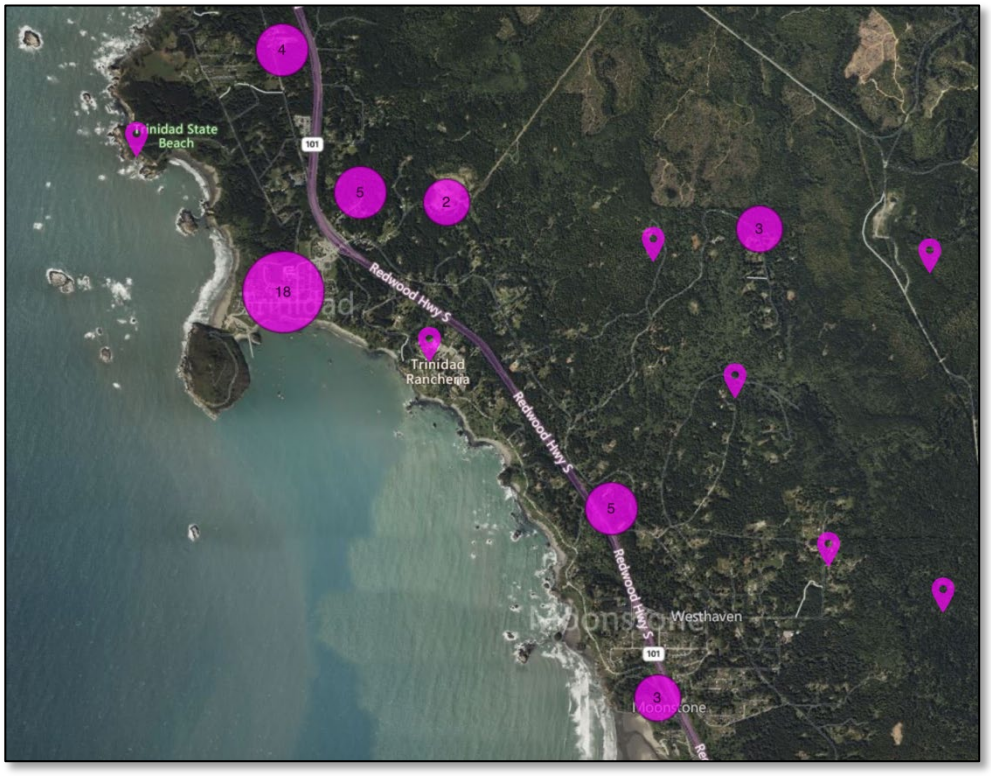


Figure 98. Cal EPA Regulated Sites in the Planning Area.

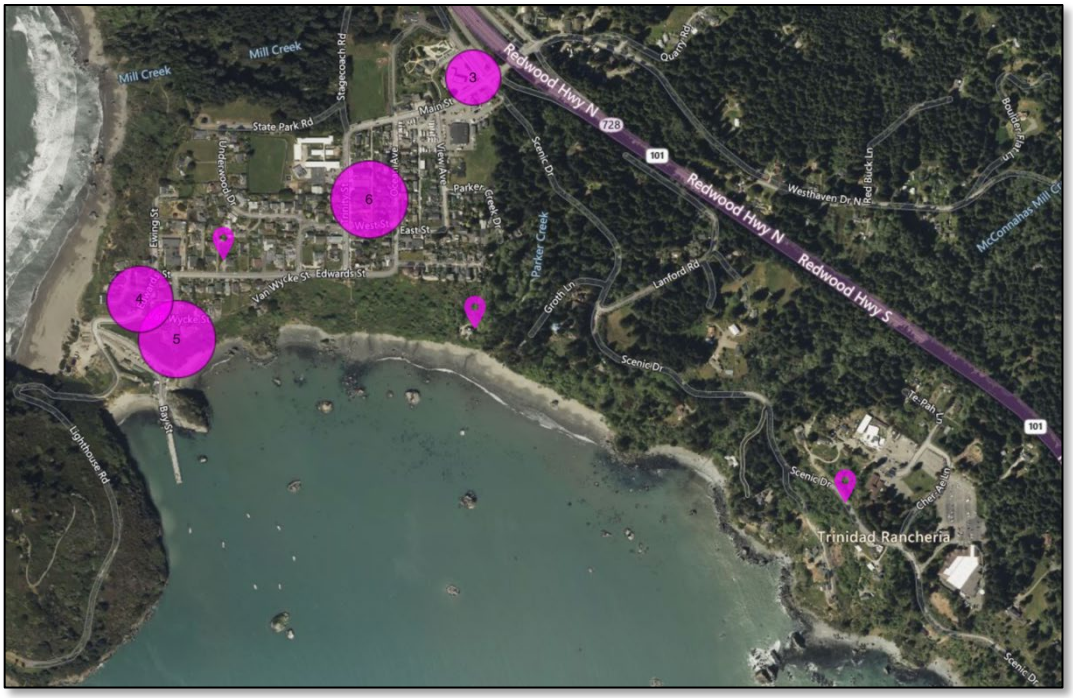


Figure 99. Cal EPA Regulated Sites in Northern Rancheria Parcels.

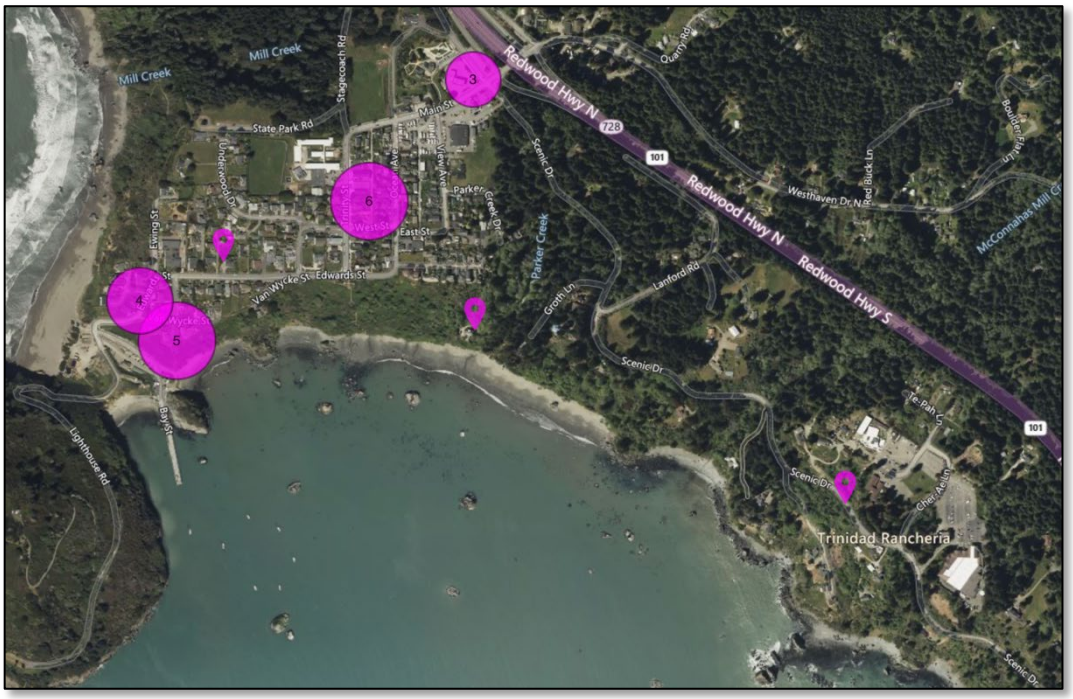


Figure 100. Cal EPA Regulated Sites in Trinidad Harbor.

3. Extent:

The Rancheria's context statement from its 2023 Threat and Hazard Identification and Risk Assessment (THIRA) is:

During a winter night with a sold-out concert, a fuel truck overturns on Highway-101 as it passes the Main Parcel. The fuel catches fire and burning fuel flows downhill in the vicinity of the casino/hotel. Light, offshore winds blow the smoke toward The Heights Casino resulting in the need to quickly evacuate and/or shelter in place. More than 1,000 guests are in attendance; 150 employees, and 81 tribal members in the Main Parcel and Westhaven Housing are affected. Of those, 189 are minors, 172 are over 65, 125 have disabilities / access and functional needs, and 118 speak English as a second language. Fifty people (9 minors, 9 over 65, 6 with disabilities, and 6 that speak English as a second language) are treated for respiratory injuries. The Heights Casino/Sunset Restaurant is closed for 7 days for decontamination, resulting in $21,000+ in lost revenue. Four jurisdictions are affected (Trinidad Rancheria, City of Trinidad, State of California, Federal Government). Four partner organizations include non-profit, volunteer, faith-based, and private sector organizations are affected.

4. Previous Occurrences on Trinidad Rancheria:

To date, the Tribe has had minor HAZMAT spills that have been easily contained and cleaned up. There have been boating accidents, including collisions in the local waters that resulted in small spills. One example of how easily small spills occur was from an individual who launched his boat from the beach (uncontrolled and allowed) and the owner's vehicle got stuck in the water. The result was a small HAZMAT incident.

5. Probability of Future Events on Trinidad Rancheria:

HAZMAT spills are a certainty. As described in Previous Occurrences, small boat and vehicle operators are certain to cause spills in the future.

The U.S. Department of Transportation has recorded more than 900 water HAZMAT incidents and more than 480,000 highway HAZMAT incidents since 1975. The incidents were responsible for more than 380 highway fatalities and three (3) water fatalities. The highway incidents resulted in more than $1.4 billion in property damages, and the water incidents resulted in more than 12.8 million in property damages. (Bureau of Transportation Statistics, 2019)

The use of chemicals for such functions as wastewater treatment presents a risk of small-scale HAZMAT incidents. Transportation of HAZMAT trucks on Highway-101 presents a risk of a major HAZMAT accident. Accidents are a part of life so a HAZMAT spill is almost certain; it is

a matter of how big and where. At the height of fishing/crabbing seasons, the number boats in a small area increases greatly, resulting in a higher probability of an accident.

In short, while the probability of a catastrophic HAZMAT-related accident is relatively low, lesser accidents occur more often.

6. **Vulnerability of Trinidad Rancheria:**

Because accidents happen, Trinidad Harbor is at risk for a HAZMAT spill on any given day. While a disruption impacts revenue, natural resources are also at risk. With respect to native natural and cultural resources, a marine oil spill first threats traditional fishing, hunting, and gathering. Wildlife Populations can be severely impacted or destroyed. Wetlands protect many species and act as a buffer between the ocean and human development. As the Rancheria builds out its interpretive center at Trinidad Harbor, those operations may be impacted in the future.

7. **Impact on Trinidad Rancheria:**

The impact could be as little as a temporary disruption in operations while a spill is contained and cleaned up; however, the impact could be as large as injuries, deaths, or disrupting the Rancheria's largest source of non-gaming revenue. As described in the THIRA context statement, a Heights Casino/Sunset Restaurant closure for 7 days for decontamination could lead to $21,000+ in lost revenue.

8. **Impact of Climate Change:**

Climate change is not a significant factor.

Section II: Hazard Identification and Risk Assessment

E. Human-Caused Threat Analysis

Human-caused Risks - intentional actions of an adversary

i. Armed Assault
ii. Cyberattack - Data
iii. Cyberattack – Infrastructure
iv. Sabotage
v. Biological Attack

While human-caused threats are optional and not evaluated by FEMA as a part of Hazard Mitigation Planning reviews, Trinidad Rancheria is including them in its Hazard Mitigation Plan to better integrate the HMP with all elements of the National Preparedness System. Human-caused risks are fully assessed in Trinidad Rancheria's 2023 Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR). The same process for identifying and assessing natural hazards was used for technical hazards. The results are in Table 29.

Table 29: Trinidad Rancheria's Human-Caused Threats of Greatest Concern.

Threat/Hazard	Location	Extent	Probability	Concern	Sum	Rank
Armed Assault	27	46	38	62	173	1
Cyberattack (data)	35	42	36	58	171	2
Cyberattack (Infrastructure)	34	45	34	58	171	3
Sabotage	29	41	30	49	149	4
Biological Attack	20	41	41	39	141	5

1. Armed Assault

1. General hazard description:

An active shooter is an individual actively engaged in killing or attempting to kill people in a populated area. The FBI defines a "mass shooting" as any incident in which at least four people are murdered with a gun. The number of active shooter incidents as well as casualties has risen dramatically in the US since 2000. Figure 101 shows that general trends between 2018 and 2023 are up nationally but dropped between 2021 and 2023. In 2023, there were 48 active shooter incidents and 244 casualties. (Federal Bureau of Investigation, 2024)

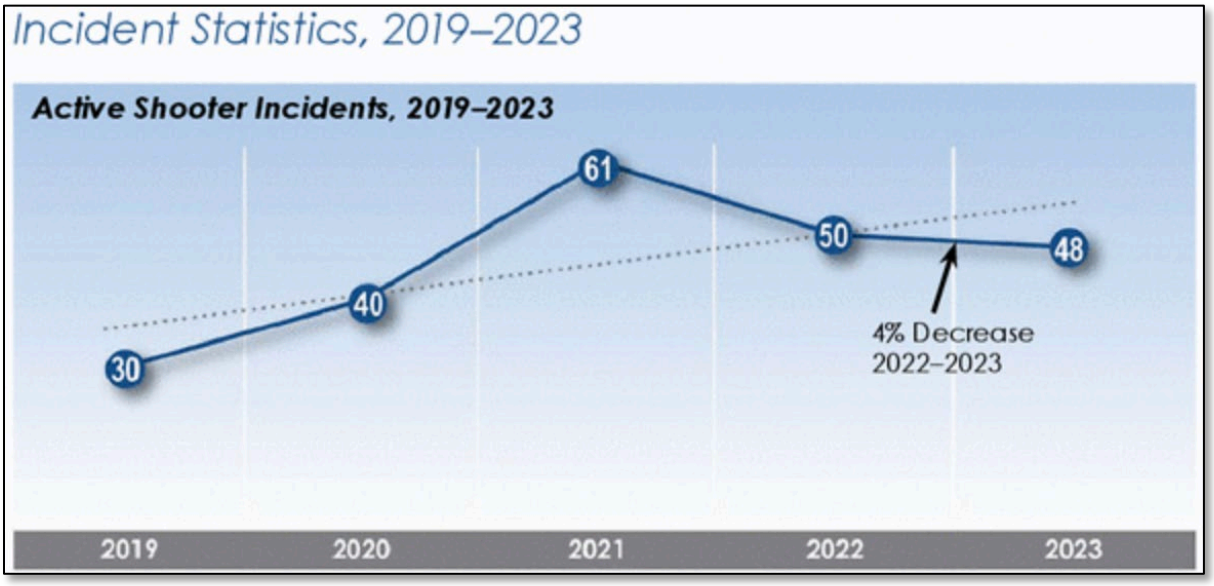


Figure 101. Active Shooter Incidents 2019-2023. (Federal Bureau of Investigation, 2024)

In addition to the number of active shooter incidents decreasing in 2023, the number of casualties also decreased to 244 from 313 in 2022. This compares to 243 casualties in 2021 (Figure 102).

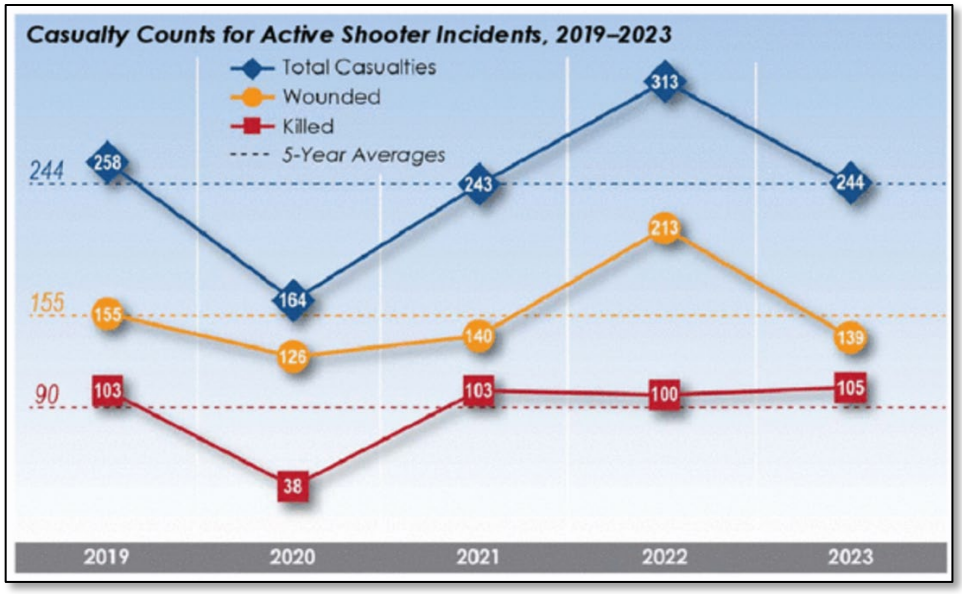


Figure 102. Active Shooter Incidents 2019-2023 Casualties. (Federal Bureau of Investigation, 2024)

2. **Location:**

As is evident in Table 29, the Rancheria sees active shooter events as localized (smaller number means more localized). While a shooting spree could happen, the general concern is a shooting at a specific facility.

While 50% of active shooter events in 2024 occurred in multiple locations, by far most of active shooter events occurred in open space and places of commerce (Figure 103).

Figure 103. Active Shooter Incidents 2019-2023 Casualties. (Federal Bureau of Investigation, 2024)

3. **Extent:**

Due to the lack of local trauma care, any shooting is a major event. The worst case would be a mass shooting of four (4) or more people. County/local healthcare would be immediately overwhelmed.

The Rancheria's context statement from its 2023 Threat and Hazard Identification and Risk Assessment (THIRA) is:

During a rainy winter night and sold-out concert at the Heights with 800 guests in attendance and more than 1,000 people total (172 over 65, 125 with disabilities / access and functional needs, and 118 that speak English as a second language), a Sovereign Citizen group conducts a terrorist attack to protest Tribal governments' use of Federal lands and resources. They attack with assault weapons and set suspected improvised explosive devices (IEDs) at doorways to inhibit escape. There are 24 fatalities (4 over 65, 3 with disabilities, and 3 that speak English as a second language) and more than 50 injuries (9 over 65, 6 with disabilities, and 6 that speak English as a second language). Four jurisdictions are affected (Trinidad Rancheria, City of Trinidad, State of California, and Federal Government). Four partner organizations include non-profit, volunteer, faith-based, and private sector organizations are also affected.

4. **Previous Occurrences on Trinidad Rancheria:**

Fortunately, Trinidad Rancheria has not had an active shooter event. However, Douglas County law enforcement does encounter potentially violent people and regularly conducts active shooter training at venues across the county.

5. **Probability of Future Events on Trinidad Rancheria:**

While the probability of an active shooter event cannot be determined due to lack of statistics, these events occur in rural communities throughout the nation.

6. **Vulnerability of Trinidad Rancheria:**

Providence St. Joseph Hospital in Eureka is the closest trauma center. It is a Level III trauma center meaning it has the ability to provide prompt assessment, resuscitation, surgery, intensive care, and stabilization of injured patients and emergency operations. However, St. Joseph Hospital is more than a 25-mile drive from the Reservation.

7. **Impact on Trinidad Rancheria:**

Again, any level of active shooter will overwhelm the local healthcare resources. Trinidad Rancheria is a small and tight knit community and any shooting would be a traumatic event for the Tribe.

8. **Impact of Climate Change:**

Climate change is not a significant factor.

2. Cyberattack - Data

1. General hazard description:

The two main cyberattack scenarios of concern for Trinidad Rancheria are cyberattacks against infrastructure to affect utilities and ransomware attacks on information. With respect to ransomware attacks, the Cybersecurity and Infrastructure Security Agency (CISA) reports that multiple Tribes have suffered ransomware and cyber-attacks, which impacted network and email access, communications, and social services infrastructure and economic enterprises. In some cases, these attacks have caused millions of dollars in losses. (CISA 2022) The majority of ransomware attacks cost the jurisdiction/organization $500,000.00 or more. (CISCO 2024)

2. Location:

Ransomware attacks could be localized against a single Tribal member, to attacks against an enterprise such as the casino, to a Reservation-wide attack that takes down the Tribal government.

3. Extent:

Cyberattacks may be anywhere from an inconvenience to causing a total shutdown of the government and loss of revenue by enterprises.

The Rancheria's context statement from its 2023 Threat and Hazard Identification and Risk Assessment (THIRA) is:

A sovereign citizen group conducts a persistent ransomware/information theft attack on Trinidad Rancheria and its enterprises. In addition to interrupting Tribal Operations, The Heights Casino is unable to operate and loses its ability to operate for 30 days, costing approximately $90,000 ($3,000 per day) in lost revenue. Controls for the wastewater facilities are also interrupted. The cost to regain access to the data is $3 million per event. In addition to the ransom, Trinidad Rancheria must bear the cost of scrubbing and rebuilding its Information Technology (IT) system, costing around $250,000.

4. Previous Occurrences on Trinidad Rancheria:

Due to security concerns, previous occurrences will not be presented here.

5. Probability of Future Events on Trinidad Rancheria:

Future cyberattacks are a certainty. The IT Department continuously scans for and block intrusions.

6. Vulnerability of Trinidad Rancheria:

Any and every device connected to the internet exposes the Tribe to a cyberattack. In 2024, the number three (3) target for ransomware is central/Federal government. (Irei 2024) As with any government/population, the entirety of the Tribe and its members are vulnerable to cyberattack.

7. Impact on Trinidad Rancheria:

Again, cyberattacks may be anywhere from an inconvenience to causing a total shutdown of the government and loss of revenue by enterprises.

8. Impact of Climate Change:

Climate change is not a significant factor.

3. Cyberattack - Infrastructure

1. **General hazard description:**

The two main cyberattack scenarios of concern for Trinidad Rancheria are cyberattacks against infrastructure to affect utilities and ransomware attacks on information. According to the Department of Homeland Security, Russia has engaged in cyberattacks on U.S. critical infrastructure since 2014. (Lindsey 2019) More recently, the Department of Justice reported on its disruption when the People's Republic of China botnets hacked U.S. critical infrastructure. (U.S. Department of Justice 2024)

2. **Location:**

A full Supervisory Control and Data Acquisition (SCADA) attack could be used to take down an entire network such as all PG&E regional customers. For a network attack such as the 2021 ransomware attack on the Colonial Pipeline, the entire region could be impacted.

3. **Extent:**

Cyberattacks may be anywhere from an inconvenience to causing a total shutdown of the government and loss of revenue by enterprises.

4. **Previous Occurrences on Trinidad Rancheria:**

Trinidad Rancheria has not had a utility loss due to a cyberattack in networks that it is aware of.

5. **Probability of Future Events on Trinidad Rancheria:**

Future cyberattacks are a certainty. Like other customers, Trinidad Rancheria relies upon the utility provider to protect their networks.

6. **Vulnerability of Trinidad Rancheria:**

As with any government/population, the entirety of the Tribe and its members are vulnerable to cyberattack.

7. **Impact on Trinidad Rancheria:**

Again, cyberattacks may be anywhere from an inconvenience to causing a total shutdown of the government and loss of revenue by enterprises.

8. **Impact of Climate Change:**

Climate change is not a significant factor.

4. Sabotage

1. **General hazard description:**

"Labor sabotage is a deliberate act by an employee, employer, or a group of employees, with the intention of damaging, interrupting, or undermining the proper functioning of a company or organization, as well as the daily activities of workers.

In this sense, workplace sabotage can take the form of gossip or rumors that damage the reputation of a co-worker or the company, to more serious forms such as theft, intentional damage to equipment, or even cyberattacks.

The motivations to commit these acts can vary and come from personal grudges, resentment towards management or even towards co-workers. However, whatever the reason, workplace sabotage can have severe consequences for a company, including loss of productivity, damage to the work reputation of staff, loss of income, and legal consequences, just to name a few." (The Marquez Law Firm, 2023)

Sabotage can stem from a variety of motivations, such as personal grudges, resentment towards management or co-workers, dissatisfaction, perceived injustice, and external pressures. It can include a range of actions, from gossiping to theft to cyberattacks. Sabotage can have serious consequences for a company, including:

- A staff member spreading rumors about a co-worker
- Loss of productivity
- Damage to reputation
- Loss of income
- Legal consequences
- Compromised data security
- A staff member leaking confidential information
- A staff member deleting important code while on notice
- A staff member vandalizing company property

2. **Location:**

Physically, any tribal facility is susceptible to sabotage, from tool sheds and homes to the casino and pier. However, sabotage extends to the internet as perpetrators can spread information to harm the reputation of the Rancheria or steal proprietary information.

3. **Extent:**

The extent can be as little as causing loss of productivity to as great as a catastrophic arson fire or loss of public confidence in the Tribal Government. As such, the Rancheria must address all levels of safety and security. This includes not only physical security and surveillance, but also supervisor and staff member training to maintain a safe, positive workplace. Typical preventive measures include:

- **"Fostering a Positive Work Culture:** Cultivate an environment based on trust, respect, and open communication. Encourage feedback and provide support for employee grievances.
- **Comprehensive Training:** Educate employees on the importance of security, the implications of sabotage, and how to report suspicious activity.
- **Robust Security Protocols:** Implement strict access controls, regular audits, and data encryption to protect sensitive information.
- **Insider Risk Assessments:** Regularly evaluate internal processes and employee roles to identify potential vulnerabilities. " (Sign Post Six, 2024)

4. **Previous Occurrences on Trinidad Rancheria:**

Due to security concerns, previous occurrences will not be presented here.

5. **Probability of Future Events on Trinidad Rancheria:**

A general prediction of probability of future catastrophic events is not possible. However, sabotage encompasses such acts as disrupting productivity and bullying. As such, some level of sabotage is inevitable. It will be incumbent upon the Rancheria and its enterprises to prevent the conditions the fuel sabotage.

6. **Vulnerability of Trinidad Rancheria:**

Because of the wide breadth of physical, emotional, behavioral, and psychological forms that sabotage takes, every aspect of Rancheria operations is vulnerable to sabotage.

7. **Impact on Trinidad Rancheria:**

The ramifications of sabotage extend beyond immediate financial loss. They encompass long-term reputational damage, erosion of staff member trust, and potential legal repercussions. The resultant atmosphere of suspicion can significantly hinder the Rancheria's ability to innovate, grow, and maintain a positive workplace environment.

8. **Impact of Climate Change:**

Climate change is not a significant factor.

5. Biological Attack

1. **General hazard description:**

"A **biological attack** is the intentional release of a pathogen (disease causing agent) or biotoxin (poisonous substance produced by a living organism) against humans, plants, or animals. An attack against people could be used to cause illness, death, fear, societal disruption, and economic damage. An attack on agricultural plants and animals would primarily cause economic damage, loss of confidence in the food supply, and possible loss of life. It is useful to distinguish between two kinds of biological agents:

- Transmissible agents that spread from person to person (e.g., smallpox, Ebola) or animal to animal (e.g., foot and mouth disease).
- Agents that may cause adverse effects in exposed individuals but that do not make those individuals contagious to others (e.g., anthrax, botulinum toxin)." (Department of Homeland Security, 2004)

A biological attack may be carried out in one or more ways.

- **Aerosol dissemination** is the dispersal of an agent in air from sprayers or other devices.
- **Food or water,** especially ready-to-eat food (vegetables, salad bars) could be intentionally contaminated with pathogens or toxins. The water supply is less vulnerable because dilution, filtration, and the addition of chlorine can kill most disease-causing organisms.
- **Human carriers** could spread transmissible agents by coughing, through body fluids, or by contaminating surfaces. Most agents would make people ill or incapacitated before they become highly contagious, thereby reducing transmission of the disease.
- **Infected animals** can cause people to become ill through contact with the animals or contaminated animal products.
- **Insects** naturally spread some agents such as plague bacteria (vector borne illnesses) and potentially could be used in an attack.
- **Physically distributed** through the U.S. mail or other means.

In 1984, followers of the mystic Rajneesh contaminated salad bars at ten restaurants in Dalles, Oregon with *Salmonella*. 751 people suffered food poisoning, 45 of whom had to be hospitalized. The Rajneesh intended to win local elections by incapacitating voters.

2. **Location:**

Section II: Hazard Identification and Risk Assessment

Due to the various methods available for a biological attack, one could be carried out anywhere on or off of the Rancheria. However, the locations of most concern are soft targets and crowded spaces such as government buildings, The Heights Casino, the Seascape Restaurant, etc.

3. Extent:

Table 30 is a summary of biological agents of concern, their impact, and treatment. (Department of Homeland Security, 2004)

Table 30. Onset, Health Impacts, and Treatments for Biological Agents of Concern.

Disease (agent)	Incubation period*	Symptoms	Spread (person to person)	Lethality if untreated	Persistence of Organism	Vaccine Status (as of March 2005)	Medical Treatment
High Level Threat Agents							
Anthrax (*Bacillus anthracis*)	Typically, 1-6 days (inhalation) but up to 42	Fever, cough, profound sweats malaise, fatigue, myalgiaus	No (only skin form spreads)	High (if inhaled) viable in soil > 40 years	Very stable spores	Licensed	Antibiotics
Plague (*Yersinia pestis)*	1-7 days (usually 2-3 days)	Fever, cough, shortness of breath, sore lymph nodes	Moderate	High unless treated within 12-24 hours (pneumonic	For up to 1 year in soil; 270 days in live tissue	Not current	Antibiotics
Tularemia (*Francisella tularensis*)	1-21 days (average 3-6)	Fever, cough, pneumonia, headache	No	Moderate	For months in moist soil or other media	Not current	Antibiotics
Marburg (Viral hemorrhagic fever)	4-21 days	Sudden onset, fever, headache, followed by vomiting and diarrhea, rash, generalized bleeding in severe cases	Via fluids	>25% lethal	Relatively unstable	None	Supportive treatment only
Ebola (Viral hemorrhagic fever	4-21 days	Sudden onset, fever, headache, followed by vomiting and diarrhea, rash, generalized bleeding in severe cases	Via fluids	50–80% lethal	Relatively unstable	Investigational	Supportive treatment only
Smallpox (Variola major virus)	7-17 days (average 12)	Fever, aches, after 2–4 days rash appears	Moderate	High to moderate ≥ 30% lethal	Very stable	Licensed	Supportive
Botulism (*Clostridium botulinum* toxin)	12 hours-5 days	Muscle paralyzing illness	High without respiratory support	Stable for weeks in nonmoving food/water	Licensed (availability uncertain)	Antitoxin if administered quickly	High without respiratory support
Lower-Level Threat Agents (Selected Category B Agents)							

Table 30. Onset, Health Impacts, and Treatments for Biological Agents of Concern.							
Disease (agent)	**Incubation period***	**Symptoms**	**Spread (person to person)**	**Lethality if untreated**	**Persistence of Organism**	**Vaccine Status (as of March 2005)**	**Medical Treatment**
Cholera (*Vibrio cholerae*)	4-5 hours (usually 2-3 days)	Sudden onset of voluminous watery diarrhea, vomiting, cramps, dehydration	Rare, although spreads rapidly via untreated water	Low with treatment, high without	Unstable in aerosols & fresh water, stable in salt water	Investigational	Antibiotics
Glanders (*Burkholderia mallel)*	1-14 days via aerosol	Pneumonia with or without blood poisoning, ulcers in nose, mouth, throat and lungs	No	Death in 7–10 days in blood poisoning form	Very stable	None	Antibiotics
Q fever (*Coxiella burnetii)*	7-41 days	Flu-like illness that can lead to pneumonia and hepatitis	No	Very low	For months on wood and sand	Not licensed in U.S.	Antibiotics
Encephalitis (Alphaviruses)	2-6 days	Fever, aches, pain behind the eye, nausea, vomiting	Low	Low	Relatively unstable	None	Supportive treatment
Ricin (*Ricinus communis*)	18-24 hours	Can shut down organ function	No	High (injected)	Stable supportive treatment	Investigational	No antidote;

A legacy context statement from a Threat and Hazard Identification and Risk Assessment (THIRA) is:

During a night with a sold-out show a Sovereign Citizen group protesting Tribal uses of "federal" lands carries out a bioterror attack similar to the 1984 Rajneeshee Salmonella attack in The Dalles, Oregon. They contaminate salad bars and other common food preparation areas with Salmonella. Contamination of The Heights Casino/Sunset Restaurant surfaces sicken more than 300 people (52 over 65, 40 with disabilities/access and functional needs, 33 that speak English as a second language). Twenty-five (25) are hospitalized and there are 5 fatalities. The Heights Casino/Sunset Restaurant is closed for 7 days for decontamination, resulting in $21,000+ in lost revenue.

4. Previous Occurrences on Trinidad Rancheria:

There are no known previous occurrences.

5. Probability of Future Events on Trinidad Rancheria:

It is not possible to predict the probability of future events.

6. **Vulnerability of Trinidad Rancheria:**

Due to security concerns, previous occurrences will not be presented here.

7. **Impact on Trinidad Rancheria:**

As with sabotage, the impact can be anywhere from inconvenience to death. Beyond the immediate effects, the ramifications of a biological attack encompass long-term reputational damage, erosion of member, staff, and public trust, and have potential legal repercussions. The resultant atmosphere of suspicion can significantly hinder the Rancheria's ability to innovate, grow, and maintain a positive workplace environment.

8. **Impact of Climate Change:**

Climate change is not a significant factor.

III. Mitigation Strategy

Figure 104. "The FEMA Mitigation Strategy: Goals, Actions, Action Plan." (Federal Emergency Management Agency 2013)

Section III: Mitigation Strategy

A formal capability assessment provides information that is helpful to assessing the Trinidad Rancheria's ability to mitigate against hazards. The Planning Team reviewed and evaluated the Trinidad Rancheria's resources, capabilities, "gaps", and mitigation opportunities in the following areas:

- **Planning and Regulatory Capabilities**
  - Planning – Table 31
  - Regulatory (Building Codes) – Table 32
  - Land Use – Table 33
- **Legal/Regulatory, Codes, and Ordinances, and Plans**
  - Administrative – Table 34
  - Staff – Table 35
  - Technical – Table 36
- **Financial Capabilities**
  - Table 37
- **Education and Outreach Capabilities**
  - Table 39
- **NFIP**
  - N/A

Section III: Mitigation Strategy

A. Hazard Management Policies, Programs, and Capabilities

Element	Requirements
C1. Does the plan include a discussion of the Tribal government's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including an evaluation of Tribal laws and regulations related to hazard mitigation as well as to development in hazard-prone areas? 44 CFR §§ 201.7(c)(3) and 201.7(c)(3)(iv) ***Intent:*** *To ensure that the Tribal government evaluates its capabilities to accomplish hazard mitigation actions through existing Tribal planning tools, programs, and other resources.*	a. The plan shall describe the Tribal government's existing capabilities to mitigate hazards in the Tribal planning area, including pre-disaster and post-disaster hazard management policies and programs. *Pre-disaster mitigation capabilities may include laws and regulations related to development in hazard-prone areas, such as natural or cultural resource conservation plans, floodplain management ordinances (including the Tribal government's existing capabilities to participate in or administer the NFIP), and building codes. Post-disaster mitigation capabilities may include grants management staff and long-term recovery plans, policies, and procedures.* b. The plan shall include an evaluation of the Tribal laws, regulations, policies, programs, and resources related to hazard mitigation and development in hazard-prone areas. The evaluation shall address the opportunities, as well as the challenges, of existing capabilities.

In general, Trinidad Rancheria complies with local, state, and Federal standards rather than create unique, hazard mitigation-related guidance such as building codes. This has been effective in mitigation-related actions such as transportation and environmental projects. However, the Tribe does recognize the need to incorporate hazard mitigation considerations into its family of plans and funding considerations. For example, during this plan update Action #1.1, "Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP," supports Objective #1.1, "Incorporate hazard mitigation into long-range planning and development activities." Similarly, Action #1.3.1, "Review and update of policies regarding building codes, sustainable landscaping, etc.," and Action #1.3.2, "Incorporate mitigation actions when building in hazard areas," support the Objective #1.3, "Utilize regulatory approaches to prevent creation of future hazards to life and property."

Trinidad Rancheria's existing pre and post disaster hazard mitigation-related plan capabilities are summarized in Table 31.

The Tribe's main opportunities lie in its status as a sovereign Tribal nation within the United States, and its ability and agility to manage its efforts directly in mitigation and resiliency.

- Nation to status –direct grant and funding partnership with state and federal agencies.

- Economic development – The Tribe has the ability for economic development to generate revenue for the government.

The main challenges are in limited resources such as staffing and funding. In addition, the Tribe can only directly control activity on trust and reservation lands.

1. Planning and Regulatory Capabilities

The Tribe's Planning capabilities are summarized in Table 31. The Tribe has regulations, policies, programs, and resources related to hazard mitigation and development in hazard-prone areas.

Table 31. Planning Capabilities.

Plans	Yes/No Year	• Does the plan address hazards? • Does the plan identify projects to include in the mitigation strategy? • Can the plan be used to implement mitigation actions?
Trinidad Rancheria Comprehensive Community-Based Plan	Yes 2011	• Yes - hazards are considered in development plans. • Yes - new development is designed to be low impact. • Yes – the low impact development is aligned with mitigation actions. It also addresses direct Highway-101 access – a major hazard mitigation action. Natural reclamation projects are also included.
Trinidad Rancheria Integrated Development Standards	Yes 2011	• Yes - hazards are considered in development standards. • Yes – buildings, streets, open areas, stormwater management, tree management, etc. • Yes – the low impact development is aligned with and provides standards for mitigation actions.
Trinidad Rancheria Integrated Management Plan	Yes 2015	• Yes – addresses all natural hazards of concern. • Yes – the plan integrates natural resources into other planning efforts. • Yes – it describes the impact and interaction of natural resources and the built environment.
Local Emergency Operations Plan	Yes 2024	• Yes – all hazards are addressed. • Yes – specifically in "Preparedness" and "Reducing Exposure to Risks and Hazards" sections. • Yes – the plans are mutually supportive.
Facility Emergency Response Plans (5)	Yes 2024	• Yes – all hazards are addressed. • Yes – specifically in "Preparedness."

Table 31. Planning Capabilities.		
Plans	**Yes/No** **Year**	• **Does the plan address hazards?** • **Does the plan identify projects to include in the mitigation strategy?** • **Can the plan be used to implement mitigation actions?**
		• Yes – the plans are mutually supportive.
Energy and Mineral Development Plan	Yes 2016	• Yes - hazards are considered in development standards. • Yes – buildings, streets, open areas, stormwater management, tree management, etc. • Yes – the low impact development is aligned with and provides standards for mitigation actions.
Chemical Response Plan	Yes Draft	• Yes – specifically, technical hazards. • Yes – preparedness / mitigation measures. • Yes – the plans are mutually supportive.
Waterfront Operations Plan (Pending Approval)	Yes Written 2011	• Yes – specifically severe storm and tsunami. • Yes – specifically severe storm and tsunami. • Yes – the plans are mutually supportive.
Continuity of Operations Plan (Draft)	Yes 2021	• Yes – all hazards are addressed • Yes – specifically severe storm and tsunami • Yes – the plans are mutually supportive
Transportation Plan	Yes 2007	• Yes – specifically road failures. • Yes – strengthening existing roads and Highway-101 directs access. • Yes – the plan contains road-specific project information.
Trinidad Rancheria Transportation Safety Plan	Yes 2014	• Yes – specifically road failures and other transportation accident potential. • Yes – strengthening existing roads and making them safer. • Yes – the plan contains road-specific project information.
Stormwater Management Plan	Yes 2016	• Yes • Yes • Yes
Humboldt County Community Wildfire Protection Plan (Not a Tribally – Maintained plan)	Yes 2013	• Yes – wildfire prevention. • Yes – wildfire prevention. • Yes – the plans are mutually supportive.
Trinidad Rancheria Renewable Energy Resource Assessment and Feasibility Study	Yes 2016	• No – the plan is focused on saving energy. • Yes – projects such as solar power can reduce the Tribe's vulnerability to power failure. • Yes – renewable energy options could mitigate power failure effects.

Section III: Mitigation Strategy

Table 31. Planning Capabilities.		
Plans	**Yes/No** **Year**	• **Does the plan address hazards?** • **Does the plan identify projects to include in the mitigation strategy?** • **Can the plan be used to implement mitigation actions?**
Trinidad Rancheria 2016 Nonpoint Source Pollution Assessment Report and Plans	Yes 2016	• Yes – specifically water-based hazards. • Yes – it discusses management practices. • Yes – storm runoff in particular.
Trinidad Rancheria Tribal Environmental Plan	Yes 2018	• Yes – water, soil, air, and pest vectors. • Yes – specifically stormwater runoff and pest control. • Yes – especially the "Emergency Preparedness" chapter.
Historical and Cultural Resource Study	Yes In Process	• Yes – dangers to historically and culturally significant plant, animals, and items. • Yes – protection of natural and cultural resources; expedite post-disaster recovery. • Yes – this plan supports mitigation and recovery efforts.
Drought Contingency Plan Draft)	Yes Draft 2020	• Yes – drought and water supply interruption. • Yes – water access, storage, delivery, etc. • Yes – specific projects are identified.

Trinidad Rancheria's existing pre- and post-disaster hazard mitigation-related regulatory capabilities are summarized in Table 32.

Trinidad Rancheria's existing pre and post disaster hazard mitigation-related regulatory capabilities are summarized in Table 32 and Table 33. The greatest challenge that Trinidad Rancheria faces in developing and monitoring regulations is it does not have the resources to engage in constant enforcement activities. The Tribe does not have its own fire department and relies upon either local or Federal fire services.

Table 32. Building Code Capabilities.		
Building Code, Permitting, and Inspections	**Yes/No**	**Are codes adequately enforced?**
Building Code	No	Version/Year: Trinidad Rancheria complies with existing local, state, and Federal codes rather than establish its own.
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	Score: N/A
Fire department ISO rating	No	Rating: N/A

Section III: Mitigation Strategy

Table 32. Building Code Capabilities.		
Building Code, Permitting, and Inspections	**Yes/No**	**Are codes adequately enforced?**
Site plan review requirements	Yes	Location/project dependent – Trinidad Rancheria complies with the requirements from the specific funding source; Bureau of Indian Affairs, Federal Highway Administration, etc.

Trinidad Rancheria does not have land use or planning ordinances. As potential projects arise, the responsible Tribal Department leads studies, analysis, and planning efforts (contracted as necessary). Prospective projects are then brought before Tribal Council on a case-by-case basis for approval. As summary of land use regulation capabilities is in Table 33.

Table 33. Land Use Regulation Capabilities.		
Land Use Planning and Ordinances	**Yes/No**	• **Is the ordinance an effective measure for reducing hazard impacts?** • **Is the ordinance adequately administered**
Zoning ordinance	No	• Discussion on zoning in Comprehensive Plan and Integrated Development Standards. • Decisions regarding zoning are decided on a case-by-case basis by Tribal Council.
Subdivision ordinance	No	• Local ordinance applies. • Subdivisions are trust lands. • On a case-by-case basis, Tribal Council determines allotments, size, etc. • Trinidad Rancheria is working on an assignment ordinance to establish how lots are assigned on existing land. o Does not establish how lots assigned for future land purchases.
Floodplain ordinance	No	• There are no standing ordinances. Decisions are made on a case-by-case basis. • No part of Trinidad Rancheria lies in a floodplain.
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	• There are no standing ordinances. Decisions are made on a case-by-case basis. • While Trinidad Rancheria has multiple hazard specific studies/plans, it does not have ordinances to enforce the standards.
Flood insurance rate maps	No	• There are no standing ordinances. Decisions are made on a case-by-case basis. • No part of Trinidad Rancheria lies in a floodplain.
Acquisition of land for open space and public recreation uses	No	• There are no standing ordinances. Decisions are made on a case-by-case basis. • No standing ordinances for how to assign future land purchases.

Table 33. Land Use Regulation Capabilities.		
Land Use Planning and Ordinances	**Yes/No**	• **Is the ordinance an effective measure for reducing hazard impacts?** • **Is the ordinance adequately administered**
How can these capabilities be expanded and improved to reduce risk?		
• Trinidad Rancheria can develop baseline governing documents in consideration of hazard mitigation. o The Trinidad Rancheria Economic Development Corporation (TREDC) can be a lead group in developing the baseline documents. • By accomplishing this plan's Action #1.3.1, "Review and update of policies regarding building codes, sustainable landscaping, etc.," and Action #1.3.2, "Incorporate mitigation actions when building in hazard areas," that support the Objective #1.3, "Utilize regulatory approaches to prevent creation of future hazards to life and property," Trinidad Rancheria can develop its future regulations and ordinances with hazard mitigation in mind.		

2. Administrative and Technical Capabilities

As with planning and regulatory capabilities, Trinidad Rancheria is challenged with a lack of resources regarding administrative and technical capabilities (Tables 34 and 35). Existing staff work outside of their specific area of expertise to accomplish actions. For example, the Rancheria does not currently have the resources for a full-time emergency manager and relies upon the various departments to accept responsibility for these requirements. In 2024, the Rancheria hired an OES Technician through grant funds but needs to identify a long-term funding source to develop a fully credentialled Emergency Manager. The Tribe seeks external expert assistance as required.

Table 34. Administrative Capabilities.		
Administration	**Yes/No**	• **Describe capability** • **Is coordination effective?**
Planning Commission	No	• Determined on a case-by-case; projects are negotiated and discussed by departments and approved by Tribal Council. • Yes – departments and Tribal Council have a close working relationship.
Mitigation Planning Committee	Yes	• The OES Team - Across spectrum of disciplines o No engineering, planning, building, emergency mgmt., fire, law departments. • Partially - coordination difficult without key, lead emergency manager.

Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	• Bureau of Indian Affairs and Tribal general funds support:
		  o Road maintenance
		  o Facility maintenance

Section III: Mitigation Strategy

Table 34. Administrative Capabilities.		
Administration	**Yes/No**	• **Describe capability** • **Is coordination effective?**
		○ External housing maintenance ○ Pier crew for harbor • Environmental funds support land management. • Transportation funds for road maintenance. • Partially – the varied revenue streams across programs makes a cohesive effort difficult.
Mutual aid agreements	Yes	• Humboldt County Sheriff provides law enforcement. • California Highway Patrol provides transportation related crash data. • Fire support is provided through multiple local and Federal agreements depending on the Tribal land area. • Yes – the Tribe has a good relationship with its MOU partners.

As previously described, one of the greatest challenges for Trinidad Rancheria is a lack of resources for dedicated, full-time employees for specific responsibilities (Table 35). The Tribe accomplishes its responsibilities through a cross-matrixed approach in which staff members have both primary and additional responsibilities.

Table 35. Staff Capabilities.		
Staff	**Yes/No FT/PT[1]**	• **Is staffing adequate to enforce regulations?** • **Is staff trained on hazards and mitigation?** • **Is coordination between agencies and staff effective?**
Chief Building Official	No	• No - maintenance staff comply, but no inspector. • Partially – maintenance staff are trained on their specific duties (ex. Wastewater treatment and land management); no specific mitigation staff. • Yes – good coordination for respective programs.
Floodplain Administrator	No	• No – no part of Trinidad Rancheria lies in a floodplain. • Partially – the Environmental Director does work storm water and similar issues. • Yes – good coordination for respective programs.
Emergency Manager	No	• Partial – respective departments focus on their specific responsibilities. An OES Technician was hired in 2024 and is building credentials to become a full Emergency Manager. • Partially – case-by-case depending on the department. • Yes – good coordination for respective programs.

[1] FT – full-time; PT – part-time position

Table 35. Staff Capabilities.		
Staff	**Yes/No FT/PT[1]**	• **Is staffing adequate to enforce regulations?** • **Is staff trained on hazards and mitigation?** • **Is coordination between agencies and staff effective?**
Community Planner	No	• No – the Tribe contracts for planners as required for various efforts. • No • Yes – good coordination between departments.
Civil Engineer	No	• No – the Tribe contracts for this capability. • No • Yes – good coordination between departments.
GIS Coordinator	Yes PT	• No – the Environmental Department provides GIS services. • Partially – the Environmental Department has related responsibilities. • Yes – good coordination between departments.
Other		• Note that Tribal staff fills all these roles directly through contract support. Resources do not allow for FTEs for these positions. • Animal Control officer - enforces animal control ordinance. Helps with neutering/spaying clinics.

Closely related to staffing capabilities are technical capabilities. While staff are well-versed in their day-to-day responsibilities, they lack specific expertise in areas such as grant writing and Hazus analysis. Table 36 has a summary of the Tribe's technical capabilities.

Table 36. Technical Capabilities.		
Technical	**Yes/No**	• **Describe capability** • **Has capability been used to assess/mitigate risk in the past?**
Warning systems/services (Reverse 911, outdoor warning signals)	Yes	• Note: The State of California has not maintained Tsunami sirens. ○ NOAA airplane flyover to announce emergency. • Casino can broadcast via telephone and public address system. • Tribal Operations can broadcast through phone system. • Panic button at Tribal Operations alerts 911 but no Tribal security. • Yes – each of these systems has been used for actual and training (tsunami drills) events.
Hazard data and information	No	• No – Contract as required, gathering road/accident data for transportation plan, THIRA and SPR, HMP, etc.
Grant writing	No	• No - Contracted per project with Dept POC.
Hazus analysis	No	• No - Contract as required.

Section III: Mitigation Strategy

Table 36. Technical Capabilities.		
Technical	**Yes/No**	• **Describe capability** • **Has capability been used to assess/mitigate risk in the past?**
Harbor Safety	Yes	• The Trinidad Harbor Staff developed boater safety information such as tsunami warning indications and actions. • Yes - the Trinidad Harbor Staff distribute the information and educate customers regarding hazards.
• Need reverse 911 or automated phone alert system. • As of the writing of this Plan, the Rancheria is explori**ng** such capabilities as subscriber-based alert systems, IPAWS, FirstNet, etc.		

Section III: Mitigation Strategy

B. Financial Capabilities

Element	Requirements
C2. Does the plan include a discussion of Tribal funding sources for hazard mitigation projects and identify current and potential sources of Federal, Tribal or private funding to implement mitigation activities? 44 CFR §§ 201.7(c)(3)(iv) and 201.7(c)(3)(v) ***Intent:*** *To demonstrate that the Tribal government is aware of viable funding sources to support the implementation of mitigation actions and/or projects.*	a. The plan shall describe the Tribal government's existing funding sources for hazard mitigation actions and/or projects, including: 1. A general discussion of how the Tribal government has used non-FEMA (Tribal, private or other federal) funds for hazard mitigation projects; and 2. A general discussion of how the Tribal government has used FEMA mitigation funding, including HMGP, PDM, FMA, PA (C-G), and FMAG. b. The plan shall identify potential sources of funding to implement mitigation actions and/or projects. These shall include federal, tribal, and private sources.

1. Financial Capability Overview

As a small, impoverished community, Trinidad Rancheria's greatest restraint is its limited financial resources. Trinidad Rancheria has used both FEMA and non-FEMA funds for mitigation-related actions. The Tribe has used creative techniques to accomplish mitigation actions such as using dual-use funding sources from such agencies as the Federal Highway Administration and the Environmental Protection Agency. Trinidad Rancheria used FEMA BRIC funds for the development of this plan. However, Trinidad Rancheria has not used FEMA mitigation funding including HMGP, FMA PA (C-G), and FMAG for non-planning projects. Once approved and adopted, this plan will form the foundation for non-planning projects. In addition, Trinidad Rancheria uses Tribal Homeland Security Grant Program funds to accomplish other disaster preparedness actions. A summary of financial capabilities is in Table 37.

Table 37. Financial Capabilities.

Funding Resource	Access / Eligibility Yes/No	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes/Yes	• Yes – On a project-by-project basis o In part Federal Highway Administration (FHWA) Funds were used for the $7M+ pier (which is designed to catch and treat all runoff) and harbor restroom facility. • Yes - FHWA funds and bank loans can be used for qualifying projects.
Authority to levy taxes for specific purposes	Yes	• Taxes imposed and collected through casino-tobacco and sales go into Tribal program

Table 37. Financial Capabilities.		
Funding Resource	**Access / Eligibility Yes/No**	• **Has the funding resource been used in past and for what type of activities?** • **Could the resource be used to fund future mitigation actions?**
		funding. • No property taxes. • Yes – casino-tobacco taxes may be used.
Fees for water, sewer, gas, or electric services	No	N/A
Impact fees for new development	No	N/A
Storm water utility fee	No	N/A
Incur debt through general obligation bonds and/or special tax bonds	No	• Considered but not implemented. • Yes – if imposed, could fund projects.
Incur debt through private activities	Yes	• Yes – the Tribe has funded projects through bank loans based on revenues from prospective activity. • Yes - the Tribe is seeking private funding (banks) to fund a hotel.
Community Development Block Grant	No	• No - the Tribe does not qualify (yet). • Yes – The Tribe is trying to meet all ICDBG qualifications, policies on housing methods-whether they are renting or ownership homes-create housing authority within the structure of the Tribe.
Other federal funding programs	Yes	• The casino, restaurants, and bathrooms have been partially funded through transportation program funds through the BIA (general BIA funds for Tribes based on membership). o Yes – could be used for future projects. • Annually - BIA, DOT/FHWA, EPA basic grants to fund the Tribal government, library, social services. o Yes – could be used for future projects. • Annual budget and Miscellaneous grant funds for small projects. o No - not used for mitigation actions - program specific. • Department of Justice funds for Victims of Violence - domestic abuse violence, protection, shelter and services, legal issues. o No - not used for mitigation actions - program specific. • BIA funding for Tribal Court – the judge is writing laws and constitutional rules (example animal control). o No - not used for mitigation actions - program specific.

Table 37. Financial Capabilities.		
Funding Resource	**Access / Eligibility Yes/No**	• **Has the funding resource been used in past and for what type of activities?** • **Could the resource be used to fund future mitigation actions?**

State funding programs	Yes	• Yes - Proposition 1 EPA Stormwater runoff to clean the CA coast through State Water Resources Control Board.
		  o Stormwater runoff for Areas of Special Biological Significance – all stormwater runoff that hits the parking lot is captured and treated before it goes back into the ocean.
		  o Yes – funds can be used for qualifying projects.
		• Yes - transportation fund for education; create interest in coastal protection - used to teach the kids to fish off the pier ($10K).
		  o Yes – funds can be used for qualifying projects (education).

Coronavirus Relief Fund (CARES Act)	Yes	• Yes – Trinidad Rancheria capitalized on CARES Act funding for such projects as developing an EOC, developing non-congregate care facilities, and updating the Social Services facilities.
Other	Yes	• Yes – Indian Gaming Revenue Sharing Trust Fund - $1.1M to Trinidad Rancheria general fund . • Yes – can be used per Tribal Council approval.
Trinidad Rancheria historically accomplishes mitigation actions using several funding streams.		

2. FEMA-Funded Hazard Mitigation Efforts

Trinidad Rancheria has applied for and used numerous FEMA grants to support its mitigation efforts. Table 38 summarizes Trinidad Rancheria applications through pre-disaster hazard mitigation grant programs from 2016-2023.

Table 38. Tribal Mitigation Grant Applications.			
Fiscal Year	**Project**	**Federal cost- share**	Status
FY 2022 EMF-2022 BR-020	HMP Update	$142,500	Awarded – ongoing.

Table 38. Tribal Mitigation Grant Applications.			
Fiscal Year	**Project**	**Federal cost- share**	Status
FY 2022 EMF-2022 BR-020	0003 - Scenic Slope Stabilization 0004 – Stabilization Tribal Housing	$1,283,400.00 $3,466,800.00	Pending EHP and Technical Review – Pending approval of plan.
FY 2021 EMF-2022-BR-020-0002	Archer Road Culvert Repair	$410,981.00	Pending distribution – EHP and permitting complete. Pending approval of this Plan.
FY 2020 EMF-2020-BR-185-0001	Trinidad Rancheria Drought Mitigation Project Scoping	$300,000.00	Awarded Ongoing
FY 2019 PDMC-PL-09-CAIT004-2019-001	Trinidad Rancheria Advanced Assistance Scenic Drive Slope Stabilization	$198,000	Complete
FY 2019, PDMC-PJ-09-CAIT004-2019-002	Harbor and Tribal Operations Emergency Generators	$339,930.00	Awarded – complete
FY 2018 PDMC-PJ-09-CAIT007-2018-001, EMF-2020-PC-003	Cher-Ae Lane Slope stabilization – 2018 Project award 7/2020	$574,821.00	Awarded – complete

a) Hazard Mitigation Plan Update - 2022

Trinidad Rancheria received a $142,500.00 BRIC award to update its multi-jurisdictional hazard mitigation plan. While Trinidad Rancheria was notified of its award in a timely manner, a backlog at FEMA resulted in late distribution of funds and a late start to this project.

b) Scenic Slope Stabilization – 2022

Trinidad Rancheria submitted FY 2022 EMF-2022-BR-003 in the amount of $1,283,400 for Scenic Drive Stabilization, The Scope of work for this project was derived from the funding received from FEMA, 2019 PDM Grant, Project No. PDMC-09-CAIT004-2019-01. Scenic Drive is the only route entering and leaving Trinidad Rancheria Proper. The mitigation activity will include pier supported retaining structure and a water drainage system and roadway repair. The Trinidad Rancheria is currently going through EHP and Technical Review.

c) Stabilization Tribal Housing – 2022

Trinidad Rancheria submitted FY 2022 EMF-2022-BR-004 in the amount of $3,466,800.00 for the stabilization and restoration of Tribal Homes, The Scope of work for this project was derived from the funding received from FEMA, 2019 PDM Grant, Project No. PDMC-09-CAIT004-2019-01. The mitigation measure selected includes building a new foundations 100 ft back from the bluff edge, placement of existing homes on new foundation and placement of stabilizing rip-rap support at the bottom portion of the steep slope to impede or slow down further slope creep. The Trinidad Rancheria is currently going through EHP and Technical Review.

d) Archer Road Culvert Repair - 2021

Trinidad Rancheria received a $410,981.00 BRIC award for flood mitigation projects on Archer Road. Due to a road dip over Duke Creek and an undersized culvert, the road floods during seasonal storms. While Trinidad Rancheria was notified of its award in a timely manner, a backlog at FEMA has resulted in late obligation of funds and a late start to this project.

e) Drought Mitigation Project Scoping – 2020

Trinidad Rancheria received a $300,000.00 BRIC Project Scoping Award for the development of a multi-faceted hazard mitigation project for drought. The Project Scoping grant will provide the opportunity to study potential projects, evaluate facilities or areas to determine appropriate mitigation actions – wells, storage tank, and new water supply infrastructure do some engineering and design for identified projects and is intended to result in a future project application for an alternate water supply for Trinidad Rancheria.

f) Advanced Assistance Scenic Drive Slope Stabilization Study – 2019

Trinidad Rancheria received a $198,000.00 BRIC award for a wide area slope stabilization study. The #1 concern for Trinidad Rancheria is the continual slides along Scenic Drive both due to daily coastal erosion as well as seasonal storms. The slides threaten both access to Trinidad Rancherias Proper and homes along the slope. Upon completion of the study, Trinidad Rancheria submitted the 2022 application.

g) Cher-Ae Lane Slope Stabilization Project - 2018

Trinidad Rancheria received a $574,821.00 PDM grant to stabilize the southern slope along Cher-Ae Lane at the entrance of the Main Parcel. The project was a success as it has eliminated the continual maintenance to prevent road blockage due to seasonal slides, however backlog at FEMA resulted in late obligation of fund and late start to this project.

h) Harbor and Tribal Operations Emergency Generators - 2019

Trinidad Rancheria received a $339,930.00 PDM grant to install emergency generators at three critical facilities – Tribal Operations, the EOC/Social Services, and Trinidad Harbor. The project was a success as the Rancheria now continues seamless operations during the many unplanned power outages as well as the planned Pacific Gas and Electric Public Safety Power Shutoffs.

a) Other FEMA Funding

Since 2019, Trinidad Rancheria has received annual Tribal Homeland Security Grant Program (THSGP) awards. Of note, multiple projects have dual impacts on both security and mitigation:

- Cybersecurity projects that make the information technology (IT) more survivable due to all threats and hazards.
- Communications projects to improve disaster response coordination.
- Public Information and Warning capabilities to better inform and warn members, employees, and visitors.
- Community preparedness projects to help members become more resilient.

3. Non-FEMA Funding Sources

Trinidad Rancheria uses Tribal funding and funding from various federal agencies to support its hazard mitigation efforts. In addition, the Rancheria uses technical support from various federal and state agencies that assists in its hazard mitigation efforts. Recent examples include:

a) California STIP Funding, Advanced Planning US 101

In part California State Transportation Improvement Program (STIP) funds in the amount of $775,000.00 have been used for the PAED phase (environmental stage) of the US 101 Trinidad Area Access Improvement Project. The project aims to balance infrastructure development with tribal concerns by integrating cultural preservation, enhancing safety and access, ensuring economic opportunities, and maintaining ongoing dialogue between the tribe and project stakeholders. These mitigative measures are designed to reduce negative impacts on the tribe while enhancing the area's overall accessibility.

b) Caltrans Sustainability Grant, Climate Adaptation Plan

In part the Caltrans Sustainability Grant funds in the amount of $266,000 are part of the Trinidad Rancheria's broader commitment to reducing climate risks, building more resilient infrastructure and ensuring that the Rancheria's transportation system is sustainable, equitable and effective in the face of climate change.

c) Trinidad Harbor Pier, Federal Highway Administration

In part Federal Highway Administration (FHWA) Funds were used for the $7M+ pier. The project is designed to catch and treat all runoff to prevent damage to natural resources.

d) Environmental Department, Environmental Protection Agency

The Environmental Department receives funds from both the Federal government and the State of California for programs:

- EPA, 319 Non-Point Source Base funding. Annual funding for implementing Stormwater mitigation projects - $45,000.
- EPA, 319 Non-point Source Competitive funding. The Tribe applies each year for this funding to implement larger Stormwater mitigation projects - $125,000.
- EPA, Hazardous Waste funding. This is a two-year grant to hire and train a technician on hazardous waste operations and response, educate tribal members, hold hazardous waste collection events and manage our hazardous waste storage facility - $100,000.

- EPA, GAP grant. This is annual funding for the Environmental Department for capacity building which includes workplan items to support OES and emergency response development for the Tribe. The grant component for Human Health and Environmental Safety - $20,000.
- California Department of Fish and Wildlife, Office of Spill Prevention and Response (CDFW-OSPR) spill prevention training. This is an annual non-competitive grant to hold spill prevention and response trainings for tribal staff which includes maintenance, casino and harbor staff - $10,000.

4. Potential Funding Sources

a) Federal Funding Sources

Some common Federal funding sources include:

- **Hazard Mitigation Assistance Grant Program (HMGP)**, which provides post-disaster funds for hazard reduction projects (e.g., elevation, relocation, or buyout of structures), is administered by FEMA;
- **Building Resilient Infrastructure and Communities (BRIC)**, which helps communities reduce risks from future disasters and natural hazards, is administered by FEMA;
- **Flood Mitigation Assistance (FMA) Program**, which provides funds for NFIP-insured buildings to reduce the risk of flood damage, is administered by FEMA;
- **HMGP Post-Fire Assistance**, which provides funds to make communities more resilient after a wildfire, is administered by FEMA;
- **Department of Homeland Security funding**, in addition to FEMA programs;
- **Department of Justice,** which provides law enforcement funds;
- **Environmental Protection Agency**, which could provide funds for projects with dual hazard mitigation and environmental protection goals as well as updates to this HMP and related planning efforts such as spill prevention and response planning;
- **Indian Health Service**, which could provide funds for hazard mitigation projects that address public health and safety;
- **Rural Development Agency, USDA**, which provides loan and grant funds for housing assistance, business assistance, community development, and emergency community water and wastewater assistance in areas covered by a federal disaster declaration;
- **Community Development Block Grant**, which provides funds for a variety of community development projects, is administered by the Department of Housing and Urban Development;

- **Small Business Administration Loans**, which help businesses recover from disaster damages, is administered by the Small Business Administration;
- **Bureau of Indian Affairs**, which provides funds to support Tribal activities;
- **U.S. Army Corps of Engineers**, which provides funding for coastal and waterway projects; and
- **U.S. Fire Administration**, which provides wildfire program funds.

b) Tribal Funding Sources

Trinidad Rancheria is fully committed to the public safety and welfare of its residents and Tribal members and to the goals of the TRMHMP. The Tribe has only limited resources to devote to mitigation planning. Nonetheless the Tribe may be willing to match grant funding, either through direct monies or through allocation of resources, such as labor and expertise, in order to implement the actions discussed in this plan.

c) State and Local Funding Sources

In some cases, funding may be available from the State of California and/or Humboldt County, especially on mitigation actions that overlap jurisdictions, such as road and flood mitigation projects. The main resource for funding opportunities from the State of California is from the California Governor's Office of Emergency Services (Cal OES), which helps fund mitigation projects. In addition, the California Department of Fish and Wildlife, Office of Spill Prevention and Response (CDFW-OSPR) provides funding for spill prevention training. The Trinidad Rancheria is continually building relationships with the State of California, Humboldt County, as well as local tribes and communities such as Blue Lake Rancheria, Trinidad, Arcata, and McKinleyville, to develop partnerships to implement mitigation measures that are regional in scope.

d) Utilities

Trinidad Rancheria is currently working with Humboldt Bay Municipal Water District to secure an additional / redundant water source. Due to the limitations of the current supply form Trinidad, CA, additional water sources will mitigate against disruptions. For example, as of the writing of this plan, Trinidad Rancheria's water supply was disrupted by damage from a severe storm.

e) Private Sector

No potential funding from the private sector is currently identified. Nonetheless local businesses and residents will be encouraged to participate and contribute to the mitigation effort.

Section III: Mitigation Strategy

C. Education and Outreach Capabilities

Trinidad Rancheria engages in several mitigation education and outreach activities. For example, Trinidad Harbor Operations are engaged in tsunami warnings, evacuations, and drills. They also provide tsunami and sea hazard literature to boaters who use the facility. The Rancheria has also used transportation funds for youth ocean education programs. This plan has several specific education and awareness actions going forward. Table 39 has a summary of the current education and awareness capabilities.

Table 39. Education and Outreach Capabilities.

Program/Organization	Yes/No	• Describe program/organization and how relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	• No current programs • Yes - Action 2.1.4 is, "Organize neighborhood teams." Actions such as this could be used as a basis for outreach.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	• Monthly correspondence with Tribal members o Monthly newsletter o Flyers o Environmental Department programs o Community Council • Yes – these could be used for mitigation actions
Natural disaster or safety related school programs	Yes	• Local school programs • Yes – however, the Tribe does not have control
StormReady certification	No	• No current program • Yes – this could be used to complete mitigation actions
Firewise Communities certification	No	• No current program • Yes – this could be used to complete mitigation actions
Public-private partnership initiatives addressing disaster-related issues	Yes	• Trinidad Rancheria previously held events • Yes – this effort could be revitalized

Section III: Mitigation Strategy

D. NFIP Compliance

Trinidad Rancheria is not part of the National Flood Insurance Program. Rancheria lands are not in flood zones.

E. Capability Summary

Trinidad Rancheria currently has in place several regulatory mechanisms that could be used to mitigate hazard, with most being directed at adopting and maintaining building codes. Staff resources and/or consultants are available for the identification, development, and implementation of mitigation measures with some overlap of expertise in the various categories. Financially, the Tribe relies upon grants and revenue from enterprises to conduct mitigation activities.

Staff resources in several departments and programs, working under the auspices of the Tribal Council collectively provide hazard mitigation for Trinidad Rancheria. Trinidad Rancheria hires consultants to conduct the necessary technical studies and analyses to determine both risk and mitigation alternatives.

An evaluation of the capabilities listed in Tables 31 through 39 was performed by the Planning Team and the following mitigation related gaps and opportunities were identified:

- Update the Comprehensive Plan
    - Gap – good, regular coordination between departments could be improved.
    - Opportunity – when updated it will provide a foundation for a coordinated future development effort.
    - Opportunity – update of reservation-wide or Area Land Use plans
- Development of a single, one-stop repository for digital (GIS and CAD) base mapping and hazard profile mapping
    - Gap – there is sufficient GIS capability, but it is uncoordinated (inefficient).
    - Opportunity - a designated GIS coordinator could better support departments in an efficient manner.
- Use of multiple funding sources to enhance capabilities.
    - Gap – some departments rely solely on general fund distribution.

  - Opportunity – capitalize on Federal grant opportunities.
    - Annual Tribal Homeland Security Grants.
    - Annual Pre-Disaster Hazard Mitigation Grants.
    - Annual Assistance to Firefighter Grants .
    - Annual Department of Justice Grants.
    - Situational disaster-related Hazard Mitigation Grants.
    - Environmental grants – the Environmental Department is very aggressive in pursuing grant opportunities.
  - Opportunity – aggressively seek and apply for other grant programs.

- Cross-departmental coordination
  - Gap – coordination between departments is often ad-hoc.
  - Opportunity – a standing planning/emergency services committee could facilitate improved coordination between departments on an ongoing basis.
  - Opportunity – a standing OEM committee could provide oversight and ensure coordination between disparate efforts.

Upon receipt of a presidential disaster declaration, Trinidad Rancheria will work with FEMA to update two post-disaster hazard management tools:

- Public Assistance Administration Plan
- Hazard Mitigation Grant Program Administration Plan

Both plans will be used by Trinidad Rancheria to identify the roles and responsibilities of the Tribe in administering the FEMA Public Assistance (PA) and Hazard Mitigation Grant Programs (HMGP). In addition, the administrative plan(s) outline staffing requirements and the policies and procedures to be used. A result of developing these plans, as well as preparing this Multi-Hazard Mitigation Plan, will be to further focus Tribal resources on the importance of hazard management and mitigation planning.

Section III: Mitigation Strategy

F. Goals and Objectives

Element	Requirements
C3. Does the Mitigation Strategy include goals to reduce or avoid long-term vulnerabilities to the identified hazards? 44 CFR § 201.7(c)(3)(i) ***Intent:*** *To guide the development and implementation of hazard mitigation actions and/or projects.*	a. The plan shall include hazard mitigation goals that represent what the tribal government seeks to accomplish to reduce or avoid the vulnerabilities identified in the risk assessment. ***Goals*** *are broad policy statements that explain what is to be achieved. Goals guide the development and implementation of supporting actions.* b. The goals shall be consistent with the risk assessment.
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? 44 CFR § 201.7(c)(3)(ii) *Intent: To ensure the hazard mitigation actions are based on identified vulnerabilities and that they are focused on reducing or avoiding future losses. This is the heart of the mitigation plan and is essential for risk reduction.*	a. The plan shall include a mitigation strategy that 1) analyzes actions and/or projects that the tribal government considered to reduce the impacts of hazards identified in the risk assessment, and 2) identifies the actions and/or projects that the tribal government intends to implement. ***Mitigation actions and projects*** *means a hazard mitigation action, activity, or process that is designed to reduce or eliminate the vulnerabilities identified in the risk assessment. Examples include elevating structures, adopting a building code and taking steps to improve the tribal government's mitigation capabilities.* *A* ***comprehensive range*** *consists of different mitigation alternatives to address the vulnerabilities identified in the risk assessment (for example, restoring the natural floodplain versus restricting flooding with a structural solution).* b. The plan shall include actions and/or projects that reduce risk to existing buildings and infrastructure as well as to new buildings and infrastructure.

Section III: Mitigation Strategy

The Trinidad Rancheria community identified the following five goals to reduce or avoid long-term vulnerabilities to the identified hazards. These goals are interdependent and not listed in order of priority:

Goal #1: Protect Lives and Property *- Implement activities that assist in protecting lives by making homes; businesses; infrastructure; critical facilities; natural and cultural resources; and other property more resistant to hazards.*

Goal #2: Promote Sustainable Living *- Promote development in a sustainable manner.*

Goal #3: Increase Public Awareness of Local Hazards *- Increase public awareness, understanding, support, and demand for hazard mitigation.*

Goal #4: Enhance Partnerships and Implementation *- Build and support local partnerships to continuously become less vulnerable to hazards.*

Goal #5: Strengthen Emergency Services Capability *- Establish policies and procedures to ensure mitigation projects for critical facilities, services and infrastructure.*

Each of the five goals has one or more objectives that support it. Furthermore, each objective has one or more specific actions items to achieve the objective. While some actions may be accomplished immediately, others involve long-term projects that address such slowly developing hazards as sea level rise and coastline erosion. The timelines are broadly categorized as short-term, mid-term, and long term:

- Short-term action items are activities which tribal agencies can implement with existing resources and authorities within one to two years.
- Mid-term action items may require additional resources, such as FEMA grants, to be completed within three to five years.
- Long-term action items may require new or additional resources and/or authorities and may take longer than the required five years to implement.

The following goals, objectives, and actions represent a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with emphasis on new and existing buildings and infrastructure. While each goal, objective, and action(s) are described below, Table 40 is a summary of which hazards are addressed by each action.

Table 40. Summary of Natural Hazards Addressed by Each Actions.														
Mitigation Action	**Climate Change**	**Coastline Erosion**	**Drought**	**Earthquake**	**Epidemic**	**Flood**	**Land Animal Disease**	**Landslide**	**Marine Animal Disease**	**Sea Level Rise**	**Severe Winter Storms**	**Smoke**	**Tsunami**	**Wildfires**
Action 1.1.1: Continue, expand and improve semi-annual tsunami drills.													☐	
Action 1.1.2: Improve tsunami signage.													☐	
Action 1.1.3: Incorporate IPAWS or subscription-based warning system using multiple means of communication – landline, cell, email, internet pages, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 1.1.4: Organize neighborhood teams.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 1.2.1: Annual winter storm preparation such as clearing out culverts and other drainage.	☐					☐		☐			☐			
Action 1.2.2: Maintain culverts / drainage along Scenic Drive and Archer Road.	☐					☐		☐			☐			
Action 1.2.3: Annual fire season defensible space debris clearing.												☐		☐
Action 1.2.4: Slope stabilization/armoring to prevent landslides on the Main Parcel (Scenic Drive, Wa-Ray Road, Cher-Ae Lane, the Main Parcel housing).	☐	☐		☐		☐		☐			☐			
Action 1.2.5: Slope stabilization/armoring to prevent landslides on Trinidad Harbor property (Seascape House, Road to Seascape House).	☐	☐		☐		☐		☐			☐		☐	

Table 40. Summary of Natural Hazards Addressed by Each Actions.														
Mitigation Action	**Climate Change**	**Coastline Erosion**	**Drought**	**Earthquake**	**Epidemic**	**Flood**	**Land Animal Disease**	**Landslide**	**Marine Animal Disease**	**Sea Level Rise**	**Severe Winter Storms**	**Smoke**	**Tsunami**	**Wildfires**
Action 1.2.6: Develop an accessible tsunami evacuation path from the harbor.				□									□	
Action 1.2.7: Sink hole stabilization in the casino parking lot.						□		□			□			
Action 1.2.8: Acquire and install systems to boost the water pressure for fire suppression.														□
Action 1.2.9: Build new structures at risk of flood/tsunami considering mitigation measures (build new structures above inundation zone).				□		□		□			□		□	
Action 1.2.10: Armoring the slope to protect against long-term coastline erosion.	□	□		□		□		□		□	□		□	
Action 1.2.11: Relocate people/structures in areas of repeat hazard events (tsunami zone/slide areas).	□	□		□		□		□		□	□		□	
Action 1.2.12: Acquire more land away from predicted coastline erosion zone.	□	□		□		□		□		□	□		□	
Action 1.2.13: Rebuild the casino parking lot to alleviate sinking and erosion.						□		□			□			
Action 1.3.1: Develop / update emergency plans (Emergency Operations Plans, Continuity of Operations Plan, etc.).	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Action 1.3.2: Purchase emergency generators.				□		□		□			□	□	□	□
Action 1.3.3: Re-certify as a Red Cross shelter.				□	□	□		□			□	□	□	□
Action 1.3.4: Catalogue / acquire / protect living samples of critical species.	□	□	□				□		□	□	□	□	□	□

Table 40. Summary of Natural Hazards Addressed by Each Actions.														
Mitigation Action	**Climate Change**	**Coastline Erosion**	**Drought**	**Earthquake**	**Epidemic**	**Flood**	**Land Animal Disease**	**Landslide**	**Marine Animal Disease**	**Sea Level Rise**	**Severe Winter Storms**	**Smoke**	**Tsunami**	**Wildfires**
Action 1.3.5: Acquire air filtration systems for homes and facilities.					□							□		□
Action 1.3.6: Identify survivable, redundant, water supplies, storage, and distribution.	□		□	□		□					□		□	
Action 1.3.7: Acquire water purification systems for homes and facilities.			□											
Action 1.3.8: New access to HWY-101 for redundant, safe evacuation and ingress.	□	□		□		□		□			□			□
Action 1.3.9: Grow / protect critical species for rapid recovery – seed banks, gardens, incubation facilities, etc.	□	□	□				□		□	□	□	□	□	□
Action 1.3.10: Install survivable, redundant communications systems at Tribal Operations (including the EOC, Social Services, and library)				□		□		□			□		□	□
Action 1.3.11: Develop / build out survivable, redundant, water supply sources, storage, and distribution.	□		□	□		□					□		□	
Action 1.3.12: Develop / build out “museum quality” facilities to protect artifacts and critical records.						□					□	□		□
Action 1.3.13: Marine habitat protection – monitor, test, treat / preserve the marine habitat.	□								□					
Action 1.3.14: Land cultural and historical protection - identify and protect cultural sites, to include post-fire cultural monitoring.	□						□							□

Table 40. Summary of Natural Hazards Addressed by Each Actions.														
Mitigation Action	**Climate Change**	**Coastline Erosion**	**Drought**	**Earthquake**	**Epidemic**	**Flood**	**Land Animal Disease**	**Landslide**	**Marine Animal Disease**	**Sea Level Rise**	**Severe Winter Storms**	**Smoke**	**Tsunami**	**Wildfires**
Action 1.3.15: Harden Trinidad Harbor facilities (crane, water treatment, etc.).				☐		☐		☐			☐		☐	
Action 1.3.16: Upgrade Tribal Operations facilities to more survivable standards.		☐		☐		☐		☐			☐			☐
Action 2.1.1: Align updates to Trinidad Rancheria's family of plans to the TRMHMP.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 2.2.1: Use low impact development solutions to recover/stabilize areas.	☐	☐		☐		☐		☐		☐	☐		☐	☐
Action 2.3.1: Review and update of policies regarding building codes, sustainable landscaping, etc.	☐	☐		☐		☐		☐		☐	☐		☐	☐
Action 2.3.2: Incorporate mitigation actions when building in hazard areas.	☐	☐		☐		☐		☐		☐	☐		☐	☐
Action 3.1.1: Hold annual public meetings to update the community on status of HMP actions.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 3.2.1: Engage in FEMA's semi-annual preparedness month activities (September and April) to move community members from awareness to action.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 3.3.1: Hold semi-annual community-based hazard mitigation days such as fire defensible space cleanup and winter storm preparation.	☐			☐		☐		☐			☐	☐	☐	☐
Action 4.1.1: Attend and/or host Humboldt Operational Area disaster preparedness events.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Table 40. Summary of Natural Hazards Addressed by Each Actions.														
Mitigation Action	**Climate Change**	**Coastline Erosion**	**Drought**	**Earthquake**	**Epidemic**	**Flood**	**Land Animal Disease**	**Landslide**	**Marine Animal Disease**	**Sea Level Rise**	**Severe Winter Storms**	**Smoke**	**Tsunami**	**Wildfires**
Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events.														
Action 4.2.1: Develop a Tribal Community Emergency Response Team (CERT) program or join a multi-jurisdictional CERT program.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 4.3.1: Make hazard mitigation concerns standard agenda/document items.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 5.1.1: Provide and/or schedule FEMA emergency management training (L-583, etc.) for Tribal Council members.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 5.1.2: Reconstitute the standing OES Team.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 5.1.3: Hire/assign a full-time Emergency Services Director.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Action 5.1.4: Develop a volunteer fire department.				☐	☐	☐		☐			☐	☐	☐	☐

Section III: Mitigation Strategy

1. Goal #1: Protect Lives and Property

Description: Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to hazards.

a) Objective #1.1

Description: Advise public about health and safety precautions to protect from injury and loss.

- Short Term
    - **Action 1.1.1:** Continue, expand, and improve semi-annual tsunami drills.
        - **Benefit-Cost:** High benefit / Low cost
    - **Action 1.1.2:** Improve tsunami signage and warnings in the tsunami evacuation zone area.
        - **Benefit-Cost:** High benefit / Low cost
    - **Action 1.1.3** Incorporate IPAWS or subscription-based warning system using multiple means of communication – landline, cell, email, internet pages, etc.
        - **Benefit-Cost:** High benefit / Low cost
    - **Action 1.1.4:** Neighborhood "block captains" that lead disaster warning and response.
        - **Benefit-Cost:** High benefit / Low cost

b) Objective #1.2

Description: Reduce damage and enhance protection of dangerous areas during hazardous events.

- Short Term
    - **Action 1.2.1**: Annual winter storm preparation such as clearing out culverts and other drainage.
        - **Benefit-Cost:** High benefit / Low cost
    - **Action 1.2.2**: Maintain culverts/drainage along Scenic Drive, Wa-Ray Road, Archer Road, and the casino parking lot.
        - **Benefit-Cost:** High benefit / Moderate cost
    - **Action 1.2.3**: Annual fire season defensible space debris clearing.
        - **Benefit-Cost:** Moderate benefit / Low cost
    -
- Mid-term actions

- **Action 1.2.4**: Slope stabilization/armoring to prevent landslides on the Main Parcel (Scenic Drive, Wa-Ray Road, Cher-Ae Lane, the Main Parcel housing).
  - **Benefit-Cost:** High benefit / High cost
- **Action 1.2.5**: Slope stabilization/armoring to prevent landslides on Trinidad Harbor property (Seascape House, Road to Seascape House).
  - **Benefit-Cost:** High benefit / High cost
- **Action 1.2.6**: Develop an accessible tsunami evacuation path from the harbor.
  - **Benefit-Cost:** High benefit / Moderate cost
- **Action 1.2.7**: Sink hole stabilization in the casino parking lot.
  - **Benefit-Cost:** High benefit / High cost
- **Action 1.2.8**: Acquire and install systems to boost the water pressure for fire suppression.
  - **Benefit-Cost:** High benefit / Moderate cost

- Long-term actions
  - **Action 1.2.9**: Build new structures at risk of flood/tsunami considering mitigation measures (build new structures above inundation zone).
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.2.10**: Armoring the slope to protect against long-term coastline erosion.
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.2.11:** Relocate people/structures in areas of repeat hazard events (tsunami zone/slide areas).
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.2.12**: Acquire more land away from predicted coastline erosion zone.
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.2.13**: Rebuild the casino parking lot to alleviate sinking and erosion.
    - **Benefit-Cost:** High benefit / High cost

c) Objective #1.3

Description: Protect people; critical facilities and services; and natural and cultural resources.

- Short Term
  - **Action 1.3.1**: Develop / update emergency plans (Emergency Operations Plans, Continuity of Operations Plan, etc.).
    - **Benefit-Cost:** High benefit / Moderate cost
  - **Action 1.3.2**: Purchase emergency generators.
    - **Benefit-Cost:** High benefit / Moderate cost

- **Action 1.3.3**: Re-certify as a Red Cross shelter.
  - **Benefit-Cost:** High benefit / Moderate cost
- **Action 1.3.4**: Catalogue / acquire / protect living samples of critical species.
  - **Benefit-Cost:** Moderate benefit / Low cost
- **Action 1.3.5:** Acquire air filtration systems for homes and facilities.
  - **Benefit-Cost:** High benefit / Moderate cost
- **Action 1.3.6:** Identify survivable, redundant, water supplies.
  - **Benefit-Cost:** High benefit / Moderate cost
- **Action 1.3.7:** Acquire water purification systems for homes and facilities.
  - **Benefit-Cost:** High benefit / Moderate cost

- Mid-term actions
  - **Action 1.3.8**: New access to HWY-101 for redundant, safe evacuation and ingress.
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.3.9**: Grow / protect critical species for rapid recovery – seed banks, gardens, incubation facilities, etc.
    - **Benefit-Cost:** High benefit / Moderate cost
  - **Action 1.3.10**: Install survivable, redundant communications systems at Tribal. Operations (including the EOC, Social Services, and library)
    - **Benefit-Cost:** Moderate benefit / Moderate cost
  - **Action 1.3.11**: Develop / build out survivable, redundant, water supply sources, storage, and distribution.
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.3.12**: Develop / build out "museum quality" facilities to protect artifacts and critical records.
    - **Benefit-Cost:** High benefit / Moderate cost
  - **Action 1.3.13**: Marine habitat protection – monitor, test, treat / preserve the marine habitat.
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.3.14**: Land cultural and historical protection - identify and protect cultural sites, to include post-fire cultural monitoring.
    - **Benefit-Cost:** Moderate benefit / Moderate cost
- Long-term actions
  - **Action 1.3.15**: Harden Trinidad Harbor facilities (crane, water treatment, etc.)
    - **Benefit-Cost:** High benefit / High cost
  - **Action 1.3.16**: Upgrade Tribal Operations facilities to more survivable standards.

- **Benefit-Cost:** High benefit / High cost

2. Goal #2: Promote Sustainable Living

Description: Promote development in a sustainable manner.

a) Objective #2.1

Description: Incorporate hazard mitigation into long-range planning and development activities

- **Action 2.1.1:** Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP - Trinidad Rancheria Comprehensive Community-Based Plan, Energy and Mineral Development Plan, Chemical Response Plan, Transportation Plan, Waterfront Operations Plan (Area of Special Biological Significance - ASBS), etc.
  - **Benefit-Cost:** High benefit / Low cost (focus area of each plan development/update)

b) Objective #2.2

Description: Promote beneficial use of hazardous areas while expanding open space and recreational opportunities

- **Action 2.2.1:** Use low impact development solutions to recover/stabilize areas.
  - **Benefit-Cost:** High benefit – Moderate cost (landscaping, planting, etc.)

c) Objective #2.3

Description: Utilize regulatory approaches to prevent creation of future hazards to life and property

- **Action 2.3.1:** Review and update of policies regarding building codes, sustainable landscaping, etc.
  - **Benefit-Cost:** High benefit / Moderate cost
- **Action 2.3.2:** Incorporate mitigation actions when building in hazard areas.
  - **Benefit-Cost:** High benefit / Low cost

3. Goal #3: Increase Public Awareness of Local Hazards

Description: Increase public awareness, understanding, support, and demand for hazard mitigation.

a) Objectives #3.1:

Description: Increase public awareness, understanding, support, and demand for hazard mitigation.

- **Action 3.1.1:** Hold annual public meetings (and publish the results) to update the community on the status of Trinidad Rancheria's hazard mitigation actions.
    - **Benefit-Cost:** Moderate Benefit / Low Cost

b) Objective #3.2:

Description: Heighten public awareness of the full range of hazards they may face

- **Action 3.2.1:** Engage in FEMA's semi-annual preparedness month activities (September and April) to move community members from awareness to action.
    - **Benefit-Cost:** Moderate Benefit / Low Cost

c) Objective #3.3:

Description: Publicize and encourage the adoption of appropriate hazard mitigation measures

- **Action 3.3.1:** Hold semi-annual community-based hazard mitigation days such as fire defensible space cleanup and winter storm preparation.
    - **Benefit-Cost:** Moderate Benefit / Low Cost

Section III: Mitigation Strategy

4. Goal #4: Enhance Partnerships and Implementation

Description: Build and support local partnerships to continuously become less vulnerable to hazards. Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, business, and industry

a) Objective #4.1

Description: Build and support local partnerships with stakeholders in the community

- **Action 4.1.1:** Attend and/or host Humboldt Operational Area disaster preparedness events. Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events.
    - **Benefit-Cost:** High Benefit / Low Cost

b) Objective #4.2

Description: Build a team of committed volunteers to safeguard the community before, during, and after a disaster

- **Action 4.2.1:** Develop a Tribal Community Emergency Response Team (CERT) program or join a multi-jurisdictional CERT program.
    - **Benefit-Cost:** Moderate Benefit / Moderate Cost

c) Objective #4.3

Description: Build hazard mitigation concerns into the tribal planning and budgeting process

- **Action 4.3.1:** Make hazard mitigation concerns standard agenda/document items.
    - **Benefit-Cost:** High Benefit / High Cost

Section III: Mitigation Strategy

5. Goal #5: Strengthen Emergency Services Capability

Description: Establish policies and procedures to ensure mitigation projects for critical facilities, services and infrastructure.

a) Objective #5.1:

Description: Provide training to tribal departments and non-tribal entities on mitigation programs and techniques that could be incorporated into a variety of projects

- **Action 5.1.1:** Provide and/or schedule FEMA emergency management training (L-583, etc.) for Tribal Council members.
    - **Benefit-Cost:** High Benefit / Low Cost
- **Action 5.1.2:** Reconstitute the standing OES Team.
    - **Benefit-Cost:** High Benefit / Low Cost
- **Action 5.1.3:** Hire/assign a full-time Emergency Services Director.
    - **Benefit-Cost:** High Benefit / High Cost
- **Action 5.1.4:** Develop a volunteer fire department.
    - **Benefit-Cost:** High Benefit / High Cost

Actions with an emphasis on new and existing buildings and infrastructure.

Of note, the following actions have an emphasis on new and existing buildings and infrastructure:

- **Action 1.2.1:** Annual winter storm preparation such as clearing out culverts and other drainage
- **Action 1.2.2**: Maintain culverts/drainage along Scenic Drive and Archer Road.
- **Action 1.2.3**: Annual fire season defensible space debris clearing
- **Action 1.2.4**: Slope stabilization/armoring to prevent landslides on the Main Parcel (Scenic Drive, Wa-Ray Road, Cher-Ae Lane, the Main Parcel housing).
- **Action 1.2.5**: Slope stabilization/armoring to prevent landslides on Trinidad Harbor property (Seascape House, Road to Seascape House)
- **Action 1.2.7**: Sink hole stabilization in the casino parking lot.

- **Action 1.2.9:** Build new structures at risk of flood/tsunami considering mitigation measures (build new structures above inundation zone)
- **Action 1.2.10**: Armoring the slope to protect against long-term coastline erosion
- **Action 1.2.11:** Relocate people/structures in areas of repeat hazard events (tsunami zone/slide areas)
- **Action 1.2.12**: Acquire more land away from predicted coastline erosion zone
- **Action 1.2.13:** Rebuild the casino parking lot to alleviate sinking and erosion
- **Action 1.3.5:** Acquire air filtration systems for homes and facilities.
- **Action 1.3.6:** Identify survivable, redundant, water supplies.
- **Action 1.3.7:** Acquire water purification systems for homes and facilities.
- **Action 1.3.8**: New access to HWY-101 for redundant, safe evacuation and ingress
- **Action 1.3.10**: Install survivable, redundant communications systems at Tribal Operations (including the library)
- **Action 1.3.11:** Develop / build out survivable, redundant, water supply sources, storage, and distribution.
- **Action 1.3.12:** Develop / build out "museum quality" facilities to protect artifacts and critical records.
- **Action 1.3.15**: Harden Trinidad Harbor facilities (crane, water treatment, etc.)
- **Action 1.3.16**: Upgrade Tribal Operations facilities to more survivable standards.
- **Action 2.3.1:** Review and update of policies regarding building codes, sustainable landscaping, etc.
- **Action 2.3.2:** Incorporate mitigation actions when building in hazard areas.

Section III: Mitigation Strategy

G. Action Plan:

Element	Requirements
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized, implemented, and administered by the tribal government? 44 CFR § 201.7(c)(3)(iii) ***Intent: To identify how the plan will directly lead to implementation of the hazard mitigation actions.***	a. The plan shall describe the criteria used for prioritizing implementation of the actions. b. The plan shall identify the position, office, department, or agency responsible for implementing and administering each action.

Actions support a wide array of goals, from public awareness to the physical strengthening of buildings, drainage, roads, and other infrastructure. Using the results of the vulnerability analysis, the capability assessment, and the goals and objectives, the Planning Team formulated a list of actions for mitigation of the prioritized hazards within Trinidad Rancheria.

Once the full list actions were completed to the satisfaction of the Planning Team, the team then developed the prioritization as described in "Action Plan Assessment" (below). The action plan first summarizes the Trinidad Rancheria Planning Team's assessment of each action according to the methodology presented in FEMA's Tribal Mitigation Planning Handbook according to 4 criteria across four action types:

- Local Plans and Regulations
- Structures and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness

Section III: Mitigation Strategy

1. Action Plan Assessment

The Mitigation Action Evaluation Worksheets below were finalized during these workshops using a ranking system (per FEMA Tribal Mitigation Planning Handbook) for each criterion as outlined in Table 41:

Table 41. Action Plan Assessment Criteria.

Criteria	Points	High	Points	Medium	Points	Low
Life / Safety Impact	10	Significant impact on public safety for businesses, residents, properties	6	Direct impact on businesses, residents, properties	2	Minimal/negligible impact on businesses, residents, properties
Administrative / Technical Assistance	5	No additional staff or technical support needed to implement	3	Some administrative and technical support needed to implement	1	Significant administrative and technical support needed to implement
Project Cost	5	Low cost (<$25,000)	3	Moderate cost ($25,000-$100,000)	1	High cost to implement (>$100,000)
Other Considerations	5	Strongly supports/ advances other tribal objectives	3	Supports other tribal objectives to an extent	1	Does not support other tribal objectives or policies

Tables 42-45 depict the results of the action plan assessment:

- Table 42 – Tribal plans and regulations actions.
- Table 43 – Structure and Infrastructure actions.
- Table 44 – Natural systems protection actions.
- Table 45 – Education and awareness programs actions.

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a) Tribal Plans and Regulations

Table 42. Tribal Plans and Regulations Actions.					
Mitigation Project	Life Safety	Administrative / Technical Assistance	Project Cost	Other Considerations	Total Score
Action 1.3.1: Develop / update emergency plans (Emergency Operations Plans, Continuity of Operations Plan, etc.)	6	1	1	5	13
Action 2.1.1: Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP	6	3	5	3	17
Action 2.3.1: Review and update of policies regarding building codes, sustainable landscaping, etc.	6	5	5	3	19
Action 2.3.2: Incorporate mitigation actions when building in hazard areas	6	3	3	5	17
Action 4.1.1: Attend and/or host Humboldt Operational Area disaster preparedness events. Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events	6	5	5	5	21
Action 4.3.1: Make hazard mitigation concerns standard agenda/document items	6	5	5	5	21

b) Structure and Infrastructure Projects

Table 43. Structure and Infrastructure Actions.					
Mitigation Project	Life Safety	Administrative / Technical Assistance	Project Cost	Other Considerations	Total Score
Action 1.2.2: Maintain culverts /drainage along Scenic Drive and Archer Road.	10	1	5	5	21
Action 1.2.4: Slope stabilization/armoring to prevent landslides on the Main Parcel (Scenic Drive, Wa-Ray Road, Cher-Ae Lane, the Main Parcel housing).	10	5	1	5	21
Action 1.2.5: Slope stabilization/armoring to prevent landslides on Trinidad Harbor property (Seascape House, Road to Seascape House)	10	1	1	5	17

Table 43. Structure and Infrastructure Actions.					
Mitigation Project	Life Safety	Administrative / Technical Assistance	Project Cost	Other Considerations	Total Score
Action 1.2.6: Develop an accessible tsunami evacuation path from the harbor	10	3	3	3	19
Action 1.2.7: Sink hole stabilization in the casino parking lot.	6	3	1	5	15
Action 1.2.8: Acquire and install systems to boost the water pressure for fire suppression.	10	5	3	5	23
Action 1.2.9: Build new structures at risk of flood/tsunami considering mitigation measures (build new structures above inundation zone)	6	3	5	5	19
Action 1.2.10: Armoring the slope to protect against long-term coastline erosion	6	1	1	1	9
Action 1.2.11: Relocate people/structures in areas of repeat hazard events (tsunami zone/slide areas)	6	3	1	5	15
Action 1.2.12: Acquire more land away from predicted coastline erosion zone	6	3	1	3	19
Action 1.2.13: Rebuild the casino parking lot to alleviate sinking and erosion.	6	1	1	5	13
Action 1.3.2: Purchase emergency generators	6	3	1	3	12
Action 1.3.3: Re-certify as a Red Cross shelter	6	3	3	3	15
Action 1.3.5: Acquire air filtration systems for homes and facilities.	6	5	3	3	17
Action 1.3.6: Identify survivable, redundant, water supplies, storage, and distribution.	10	3	5	5	23
Action 1.3.7: Acquire water purification systems for homes and facilities.	10	5	5	5	25
Action 1.3.8: New access to HWY-101 for redundant, safe evacuation and ingress	6	1	1	5	13
Action 1.3.10: Install survivable, redundant communications systems at Tribal Operations (including the library)	6	3	3	5	11

Table 43. Structure and Infrastructure Actions.					
Mitigation Project	Life Safety	Administrative / Technical Assistance	Project Cost	Other Considerations	Total Score
Action 1.3.11: Develop / build out survivable, redundant, water supply sources, storage, and distribution.	10	1	1	5	17
Action 1.3.12: Develop / build out "museum quality" facilities to protect artifacts and critical records.	2	5	1	5	13
Action 1.3.13: Marine habitat protection – monitor, test, treat / preserve the marine habitat.	2	3	2	5	12
Action 1.3.14: Land cultural and historical protection - identify and protect cultural sites, to include post-fire cultural monitoring.	2	3	5	5	15
Action 1.3.14: Harden Trinidad Harbor facilities (crane, water treatment, etc.)	2	1	3	5	11
Action 1.3.15: Upgrade Tribal Operations facilities to more survivable standards	6	1	1	5	13

c) Natural Systems Protection

Table 44. Natural Systems Protection Actions.					
Mitigation Project	Life Safety	Administrative / Technical Assistance	Project Cost	Other Considerations	Total Score
Action 1.2.1: Annual winter storm preparation such as clearing out culverts and other drainage	10	5	5	5	25
Action 1.2.3: Annual fire season defensible space debris clearing	10	3	5	5	23
Action 1.3.4: Catalogue / acquire / protect living samples of critical species	2	5	5	3	15
Action 1.3.6: Grow / protect critical species for rapid recovery	2	5	5	3	15
Action 2.2.1: Use low impact development solutions to recover/stabilize areas.	2	3	3	5	13

d) Education and Awareness Programs

Table 45. Education and Awareness Programs Actions.					
Mitigation Project	Life Safety	Administrative / Technical Assistance	Project Cost	Other Considerations	Total Score
Action 1.1.1: Continue, expand and improve semi-annual tsunami drills.	10	5	5	5	25
Action 1.1.2: Improve tsunami signage	10	3	5	5	23
Action 1.1.4: Organize neighborhood teams	6	3	5	5	24
Action 1.1.3: Incorporate IPAWS or subscription-based warning system using multiple means of communication – landline, cell, email, internet pages, etc.	10	1	1	5	17
Action 3.1.1: Hold annual public meetings to update the community on status of HMP actions	6	5	5	3	19
Action 3.2.1: Engage in FEMA's semi-annual preparedness month activities (September and April) to move community members from awareness to action.	6	3	5	5	19
Action 3.3.1: Hold semi-annual community-based hazard mitigation days such as fire defensible space cleanup and winter storm preparation.	10	5	5	5	25
Action 4.2.1: Develop a Tribal Community Emergency Response Team (CERT) program or join a multi-jurisdictional CERT program.	6	1	3	5	15
Action 5.1.1: Provide and/or schedule FEMA emergency management training (L-583, etc.) for Tribal Council members.	10	3	5	5	23
Action 5.1.2: Reconstitute the standing OES Team	10	5	5	5	25
Action 5.1.3: Hire/assign a full-time Emergency Services Director	10	5	1	5	21
Action 5.1.4: Develop a volunteer fire department.	10	1	1	5	17

Section III: Mitigation Strategy

2. Action Plan Implementation

Current pre- and post-disaster hazard management is accomplished through several Trinidad Rancheria departments with assistance from some federal agencies. Table 46 summarizes Trinidad Rancheria departments and programs involved in either pre- or post-disaster hazard management.

Table 46. Departmental Hazard Mitigation Responsibilities.

Department or Agency	Hazard Mitigation Management Activities
Tribal Council	• Ultimate authority for all hazard management and mitigation activities and funding.
CEO	• Responsible for Tribal Administration, the OES Team, and overall TRMHMP execution.
Administration	• Tribal Administration is responsible for the day-to-day operations of the Tribal Office Complex, oversight of all Trinidad Rancheria Departments and Programs, as well as outreach and assistance to tribal members. • Hosts meetings and events for Tribal Members and the greater community. • Look out for the wellbeing of the people in our area. • Act as great stewards to the land around us to preserve our Rancheria's of living. • Provides avenues for the community to provide feedback to better equip our departmental services.
Animal Control	• Assists the Rancheria community with animal-related issues, as well as acting as a resource and education tool regarding pet ownership and care.
Cultural Resources	• Preserves the language and cultural traditions. • Organizes various community outreach and cultural education programs and demonstrations in partnership with other tribes. • Supports and participates in traditional cultural ceremonies. • Responsible for the care and maintenance of the existing basket and regalia collections, creation of new cultural items, development of cultural programming as well as consultation with Federal, State and Local governments on projects that impact our ancestral territory.
Education	• Provide programs which stimulate and promote educational goals for Tribal Members. • Support academic achievement and excellence as benefits the student and the Tribe in its entirety. • The RAP Education Program for K-12 students provide supplemental monies on a reimbursement basis to eligible students.

Table 46. Departmental Hazard Mitigation Responsibilities.	
Department or Agency	Hazard Mitigation Management Activities
	• The Higher Education program is designed to assist Tribal Member students to achieve such goals through providing financial assistance to qualified students.
Emergency Services	• Assists in reducing risks from hazards by focusing on the effects of the most significant hazards and threats, identifying tribal vulnerabilities and resources, sharing information, and developing strategies for risk reduction. • The future and sovereignty of Trinidad Rancheria is strengthened when the Tribe adapts to climate change, becomes more resilient to disasters, and mitigates the effects of both. • Hazard mitigation planning. • Incident Management and resource coordination. • Emergency response. • Management and update responsibility for the family of disaster preparedness, response, and recovery plans.
Environmental	• Assists in the development of environmental programs, planning, and policy for Trinidad Rancheria. • Administers the Water Quality Monitoring Program that has allowed the Tribe to collect and evaluate over two decades of data. • Administers the nonpoint source pollution program. • Administers programs to protect the Trinidad Head Area of Special Biological Significance. • Supports HAZMAT response. • Administers the invasive plant management program. • Administers the solid and hazardous waste reduction program. • Administers pollution prevention program. • Administers the climate change adaption program.
Finance & Accounting	• Protects the Tribe's resources from fraud, waste, loss, and misuse while ensuring that timely and reliable financial data are obtained, recorded, maintained, and fairly disclosed in reports to Tribal Council, Tribal Management and Granting Agencies. • Oversees the budget and accounting for the Trinidad Rancheria, and the Seascape Harbor Businesses. • The Fiscal Department is also responsible for all cash flow processes of receivables and payables. • Manages reimbursements from Federal and State Agencies are requested timely and accurately.
Housing	• Working to create a comprehensive plan that addresses the needs of the community including housing shortages, deteriorating home conditions, overcrowding and accessibility. • Seeking funding through the Indian Community Development Block Grant (ICDBG) which is intended to develop viable Indian and Alaska Native Communities, including decent housing, a

Table 46. Departmental Hazard Mitigation Responsibilities.	
Department or Agency	Hazard Mitigation Management Activities
	suitable living environment and economic opportunities, primarily for low- and moderate-income persons. o Manages rehabilitation projects: o Mold remediation o Roof improvements/repairs o Electrical repairs/improvements o Development and rehabilitation of utilities such as on-site water or sewer o Improvements to achieve greater energy efficiency • Updates and revises the Residential Land Assignment and Housing Ordinances.
Human Resources	• Serves the Seascape Restaurant, Pier, and Tribal Operations. • Matches highly qualified individuals with an employment opportunity that will promote growth and success for both the individual and our company. • Attracts and retains outstanding employees by promoting personal and professional growth as well as competitive wages with employee benefits. • Supports staff in emergency response and recovery operations.
Information Technology	• Full service 24/7-365 IT enterprise support for tribal government • Monitors tribal, local, state, and Federal partner agencies for all developing incidents which might involve potential requests for IT assistance. • Coordinates Trinidad Rancheria Information Technology operations and deployment of response staff as appropriate. • Coordinates and interfaces with local state, and Federal agencies.
Library	• Promotes the well-being and preserve the history of the tribe. • Provides 3 computers with Internet Access available for public use as well as a copier and printer. • Supports a resource library with career, legal, and periodical information available. • Maintains a children's reading room and a small collection of books on tape and DVD's.
Maintenance	• Responsible for maintenance and facilities and infrastructure such as building, roads, and water treatment. • Maintains and operates emergency power.
Member Services	• The central intake, to assist Tribal Members with all of their needs and requests. • Provides referral services for: o Case management o Medicaid / medical o Social Security o California Indian Legal Services

Table 46. Departmental Hazard Mitigation Responsibilities.	
Department or Agency	Hazard Mitigation Management Activities
	○ Veterans Administration ○ Healthy Families / Health Insurance ○ United Indian Health Services • Supports emergency needs ○ Financial assistance ○ Energy assistance ○ Food assistance
Transportation and Land Use	• Manages transportation planning to clearly demonstrate a Tribe's transportation needs and to fulfill tribal goals by developing strategies to meet transportation needs. ○ Address current and future land use ○ Economic development ○ Traffic demand ○ Public safety ○ Health, and social needs • Manages transportation and land use programs ○ Long Range Transportation Plan and Inventory Update ○ Comprehensive Safety Action Plan ○ Harbor Planning Study-Interpretive Center ○ Trinidad Pier Reconstruction and Transportation Enhancements ○ Unmet Transit Needs (UTN) Improvements ○ US 101 Trinidad Area Access Improvements ○ Cher-Ae Lane Stabilization ○ Scenic Drive Slope Instability Planning Study ○ Committees
Social Services	• Supports our tribal members with cultural integration and holistic approaches. ○ Social Services - Court and Child Welfare Advocacy, Home Visits, Emergency Services, Criminal/Civil Justice Advocacy, Case Management, and ICWA Related Services. ○ Victim Services - Information and Referral, Personal Advocacy and Accompaniment, Emergency Services, Criminal/Civil Justice Advocacy, and Emotional Support and Safety Planning. • Substance Use and Disorder Services - Assessments, Case Management, SUD Education, Referrals and Information, Wraparound Services, Individual and Group Counseling Sessions, Cultural Activities, and Aftercare. • Behavioral Health Services - Assessment and Referrals, Individual Counseling Sessions, Therapeutic Groups, Neuro-Feedback Intervention.
Tribal Court	○ Promote justice for all in a fair and impartial manner by providing quality services with integrity and confidentiality;

Table 46. Departmental Hazard Mitigation Responsibilities.	
Department or Agency	Hazard Mitigation Management Activities
	we further give our utmost respect to cultural values and traditions.
Tribal Programs	•
The Heights Casino	• Provided jobs and income for the community. • Supports preparedness, response, and recovery via: o Bingo Hall – Mass Care o Restaurants – Mass Care

The actions were sorted by total score to place them in priority groups. As can be seen in Table 47, the scoring methodology from FEMA's Mitigation Planning Handbook favors projects that impact life/safety, require little external support, are lower in cost and strongly support other tribal priorities. The Planning Team also favored projects with a shorter timeline to implement. Essentially, the prioritization largely favors "low hanging fruit" and ranks projects higher that are easier to begin. Table 47 has the prioritized actions grouped in three categories – high, medium, and low. The sorting factors, in order of priority are:

- Overall project score – high to low (Tables 42-45)
- Project cost – low to high
- Timeline to implement – short to long

The Planning Team will oversee the implementation of actions and report progress to the Tribal Council semi-annually, and the tribal members annually as a minimum. Implementation of the actions will be the responsibility of assigned departments/programs. The respective Departments of Responsibility / Points of Contact (POC) will use the Mitigation Action Implementation Worksheets in Appendix E to manage the actions, report the progress, and close out the actions.

Table 47. Trinidad Rancheria Action Implementation Plan.						
Action	**Hazard Addressed**	**Responsible Department / Program**	**Potential Cost**	**Funding Sources**	**Timeline to Implement**	**Project Priority**
Action 1.1.1: Continue, expand, and improve semi-annual tsunami drills.	Tsunami	Harbor Operations	<$25,000	FEMA, tribal funds	1 year (on-going)	High
Action 1.2.1: Annual winter storm preparation such as clearing out culverts and other drainage	Climate Change / Flood / Landslide / Severe Winter Storms	Maintenance	<$25,000	Tribal funds, FEMA, DOT	1 year (on-going)	High
Action 3.3.1: Hold semi-annual community-based hazard mitigation days such as fire defensible space cleanup and winter storm preparation.	Climate Change / Earthquake / Flood / Landslide / Severe Winter Storms / Smoke / Tsunami / Wildfires	Emergency Services / Housing / Member Services	<$25,000	FEMA, tribal funds	1 year (on-going)	High
Action 5.1.2: Reconstitute the standing OES Team	All Hazards	Tribal Council / CEO / Emergency Services	<$25,000	Tribal funds, FEMA	1 year (on-going)	High
Action 1.3.7: Acquire water purification systems for homes and facilities.	Climate Change / Coastline Erosion / Drought / Land Animal Disease / Marine Animal Disease / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Emergency Services / Housing / Maintenance / Environmental	<$25,000	FEMA, tribal funds, EPA	1-3 years	High
Action 1.1.4: Organize neighborhood teams	All Hazards	Emergency Services / Housing / Tribal Programs	<$25,000	FEMA, tribal funds	1-3 years	High
Action 1.2.3: Annual fire season defensible space debris clearing	Climate Change / Smoke / Wildfires	Maintenance / Housing	<$25,000	FEMA, tribal funds	1 year (on-going)	High
Action 5.1.1: Provide and/or schedule FEMA emergency management training (L-583, etc.) for Tribal Council members.	All Hazards	Tribal Council / CEO / Emergency Services	<$25,000	FEMA, tribal funds	1 year (on-going)	High
Action 1.1.2: Improve tsunami signage	Tsunami	Harbor Operations	<$25,000	FEMA, tribal funds, DOT	1-3 years	High

Table 47. Trinidad Rancheria Action Implementation Plan.						
Action	**Hazard Addressed**	**Responsible Department / Program**	**Potential Cost**	**Funding Sources**	**Timeline to Implement**	**Project Priority**
Action 1.3.6: Identify survivable, redundant, water supplies, storage, and distribution.	Climate Change / Coastline Erosion / Drought / Land Animal Disease / Marine Animal Disease / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Emergency Services / Environmental / CEO	<$25,000	FEMA, tribal funds, EPA	3 years (on-going)	High
Action 1.2.8: Acquire and install systems to boost the water pressure for fire suppression.	Structure Fire	Harbor Operations / Maintenance	$25,000-$100,000	Tribal funds, FEMA	1-3 years	High
Action 1.2.2: Maintain culverts /drainage along Scenic Drive	Flood / Landslide / Severe Winter Storms	Maintenance	<$25,000	FEMA, Tribal funds, DOT	1 year (on-going)	High
Action 4.1.1: Attend and/or host Humboldt Operational Area disaster preparedness events. Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events	All Hazards	Emergency Services	<$25,000	Tribal funds, FEMA	1 year (on-going)	High
Action 4.3.1: Make hazard mitigation concerns standard agenda/document items	All Hazards	CEO / Tribal Administration / Emergency Services	<$25,000	Tribal funds	1 year (on-going)	High
Action 1.2.4: Slope stabilization/armoring to prevent landslides on the Main Parcel (Scenic Drive, Wa-Ray Road, Cher-Ae Lane, the Main Parcel housing).	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Severe Winter Storms	Tribal Council / CEO / Emergency Services / Transportation & Land Use	>$100,000	FEMA, tribal funds, DOT	1-3 years	High
Action 5.1.3: Hire/assign a full-time Emergency Services Director	All Hazards	Tribal Council / CEO / Human Resources	>$100,000	Tribal funds, FEMA	1-3 years	High
Action 2.3.1: Review and update of policies regarding building codes, sustainable landscaping, etc.	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Tribal Council / CEO / Emergency Services / Transportation & Land Use / Environmental / Maintenance	<$25,000	Tribal Funds, FEMA, HUD	1 year (on-going)	Medium

Table 47. Trinidad Rancheria Action Implementation Plan.						
Action	**Hazard Addressed**	**Responsible Department / Program**	**Potential Cost**	**Funding Sources**	**Timeline to Implement**	**Project Priority**
Action 3.1.1: Hold annual public meetings to update the community on status of HMP actions	All Hazards	Utilities, Natural Resources	<$25,000	Tribal Funds, FEMA	1 year (on-going)	Medium
Action 3.2.1: Engage in FEMA's semi-annual preparedness month activities (September and April) to move community members from awareness to action.	All Hazards	Emergency Services / Housing / Member Services	<$25,000	FEMA, tribal funds	1 year (on-going)	Medium
Action 1.2.9: Build new structures at risk of flood/tsunami considering mitigation measures (build new structures above inundation zone)	Earthquake / Flood / Landslide / Severe Winter Storms / Tsunami	Tribal Council / CEO	<$25,000	Tribal funds, FEMA, HUD,	5+ years	Medium
Action 1.2.12: Acquire more land away from predicted coastline erosion zone	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Sea Level Rise / Severe Winter Storms /Tsunami	Tribal Council / CEO	>$100,000	Tribal funds, FEMA, BIA	5+ years	Medium
Action 1.2.6: Develop an accessible tsunami evacuation path from the harbor	Earthquake / Tsunami	Tribal Council / CEO / Emergency Services / Transportation & Land Use	$25,000-$100,000	Tribal funds, FEMA	5 years	Medium
Action 2.1.1: Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP	All Hazards	Emergency Services	<$25,000	Tribal funds, FEMA	3 years (on-going)	Medium
Action 1.3.5: Acquire air filtration systems for homes and facilities.	Climate Change / Coastline Erosion / Drought / Land Animal Disease / Marine Animal Disease / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Emergency Services / Housing / Maintenance / Environmental	$25,000-$100,000	FEMA, tribal funds	1-3 years	Medium

Table 47. Trinidad Rancheria Action Implementation Plan.						
Action	**Hazard Addressed**	**Responsible Department / Program**	**Potential Cost**	**Funding Sources**	**Timeline to Implement**	**Project Priority**
Action 2.3.2: Incorporate mitigation actions when building in hazard areas.	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Tribal Council / CEO / Emergency Services / Transportation & Land Use / Environmental / Maintenance	$25,000-$100,000	Tribal funds, EPA, FEMA, HUD	5+ years	Medium
Action 1.1.3: Incorporate IPAWS or subscription-based warning system using multiple means of communication – landline, cell, email, internet pages, etc.	All Hazards	Emergency Services	>$100,000	Tribal funds, FEMA	1-3 years	Medium
Action 1.2.5: Slope stabilization/armoring to prevent landslides on Trinidad Harbor property (Seascape House, Road to Seascape House)	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Severe Winter Storms	Tribal Council / CEO / Emergency Services / Transportation & Land Use	>$100,000	FEMA, tribal funds, DOT	1-3 years	Medium
Action 5.1.4: Develop a volunteer fire department.	Wildfire / Structure Fire	Tribal Council / CEO / Emergency Services	>$100,000	Tribal funds, FEMA	5 years	Medium
Action 1.3.11: Develop / build out survivable, redundant, water supply sources, storage, and distribution.	Earthquake / Flood / Landslide / Severe Winter Storms / Tsunami / Wildfires	Tribal Council / CEO / Emergency Services / Transportation & Land Use	>$100,000	FEMA, BIA, tribal funds, Partner communities	5+ years	Medium
Action 1.3.4: Catalogue / acquire / protect living samples of critical species	Climate Change / Coastline Erosion / Drought / Land Animal Disease / Marine Animal Disease / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Environmental / Cultural Resources	<$25,000	Tribal funds, FEMA, EPA	1 year (on-going)	Medium
Action 1.3.9: Grow / protect critical species for rapid recovery – seed banks, gardens, incubation facilities, etc.	Climate Change / Coastline Erosion / Drought / Land Animal Disease / Marine Animal Disease / Sea Level Rise / Severe Winter Storms / Smoke / Tsunami / Wildfires	Environmental / Cultural Resources	<$25,000	FEMA, tribal funds	1 year (on-going)	Medium

Table 47. Trinidad Rancheria Action Implementation Plan.						
Action	**Hazard Addressed**	**Responsible Department / Program**	**Potential Cost**	**Funding Sources**	**Timeline to Implement**	**Project Priority**
Action 1.3.14: Land cultural and historical protection - identify and protect cultural sites, to include post-fire cultural monitoring.	Flood / Landslide / Severe Winter Storms / Tsunami / Wildfires	Cultural Resources / Emergency Services / Maintenance	<$25,000	FEMA, BIA, tribal funds	5 years	Medium
Action 1.2.7: Sink hole stabilization in the casino parking lot.	Flood / Severe Winter Storms	Maintenance	>$100,000	Tribal funds, FEMA, DOT	5 years	Low
Action 1.2.11: Relocate people/structures in areas of repeat hazard events (tsunami zone/slide areas)	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Sea Level Rise / Severe Winter Storms /Tsunami	Tribal Council / CEO / Housing	>$100,000	FEMA, tribal funds, BIA	5+ years	Low
Action 1.3.3: Re-certify as a Red Cross shelter	Earthquake / Epidemic / Flood / Landslide / Severe Winter Storms / Smoke / Tsunami / Wildfires	Emergency Services / The Heights Casino	$25,000-$100,000	FEMA, tribal funds	1-3 years	Low
Action 4.2.1: Develop a Tribal Community Emergency Response Team (CERT) program or join a multi-jurisdictional CERT program.	All Hazards	Emergency Services	$25,000-$100,000	FEMA, tribal funds	1-3 years	Low
Action 1.3.1: Develop / update emergency plans (Emergency Operations Plans, Continuity of Operations Plan, etc.)	All Hazards	Emergency Services	>$100,000	Tribal funds, FEMA	1-3 years	Low
Action 1.3.8: New access to HWY-101 for redundant, safe evacuation and ingress	Coastline Erosion / Earthquake / Flood / Landslide / Severe Winter Storms / Wildfires	Tribal Council / CEO / Transportation & Land Use	>$100,000	DOT, tribal funds, FEMA	3 years (on-going)	Low
Action 1.3.12: Develop / build out "museum quality" facilities to protect artifacts and critical records.	Earthquake / Flood / Landslide / Severe Winter Storms / Tsunami / Wildfires	Cultural Resources / Emergency Services / Maintenance	>$100,000	FEMA, BIA, tribal funds	5 years	Low
Action 1.2.13: Rebuild the casino parking lot to alleviate sinking and erosion.	Flood / Severe Winter Storms	Tribal Council / CEO / Housing	>$100,000	FEMA, tribal funds, BIA	5+ years	Low

Table 47. Trinidad Rancheria Action Implementation Plan.						
Action	**Hazard Addressed**	**Responsible Department / Program**	**Potential Cost**	**Funding Sources**	**Timeline to Implement**	**Project Priority**
Action 1.3.16: Upgrade Tribal Operations facilities to more survivable standards	Coastline Erosion / Earthquake / Flood / Landslide / Severe Winter Storms / Wildfires	Tribal Council / CEO / Emergency Services / Transportation & Land Use / Maintenance	>$100,000	Tribal funds, FEMA, BIA	5+ years	Low
Action 2.2.1: Use low impact development solutions to recover/stabilize areas.	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Sea Level Rise / Severe Winter Storms / Tsunami / Wildfires	Tribal Council / CEO / Emergency Services / Transportation & Land Use / Environmental	$25,000-$100,000	Tribal funds, EPA, FEMA	1 year (on-going)	Low
Action 1.3.2: Purchase emergency generators	Earthquake / Flood / Landslide / Severe Winter Storms / Smoke / Tsunami / Wildfires	Emergency Services / Maintenance	>$100,000	Tribal funds, FEMA	1-3 years	Low
Action 1.3.13: Marine habitat protection – monitor, test, treat / preserve the marine habitat.	Climate Change / Marine Animal Disease	Cultural Resources / Emergency Services / Maintenance	$25,000-$100,000	FEMA, BIA, tribal funds	5 years	Low
Action 1.3.10: Install survivable, redundant communications systems at Tribal Operations (including the library)	Earthquake / Flood / Landslide / Severe Winter Storms / Tsunami / Wildfires	Emergency Services / IT / Maintenance	$25,000-$100,000	FEMA, tribal funds	1-3 years	Low
Action 1.3.15: Harden Trinidad Harbor facilities (crane, water treatment, etc.)	Earthquake / Flood / Landslide / Severe Winter Storms / Tsunami	Harbor Operations / Maintenance	$25,000-$100,000	Tribal funds, FEMA; DOT	5 years	Low
Action 1.2.10: Armoring the slope to protect against long-term coastline erosion	Climate Change / Coastline Erosion / Earthquake / Flood / Landslide / Sea Level Rise / Severe Winter Storms /Tsunami	Tribal Council / CEO / Emergency Services / Transportation & Land Use	>$100,000	FEMA, tribal funds, DOT	5+ years	Low

Section III: Mitigation Strategy

H. Incorporation of the Hazard Mitigation Plan Into Other Planning Mechanisms

Element	Requirements
C6. Does the plan describe a process by which the tribal government will incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate? 44 CFR § 201.7(c)(4)(iii) ***Intent:*** *To assist tribal governments in leveraging all available planning mechanisms that would allow the tribe to accomplish hazard mitigation and reduce risk.*	a. The plan shall describe the process the tribal government will use to incorporate the data, information, and hazard mitigation goals and/or actions from the mitigation plan into other planning mechanisms. ***Planning mechanism*** *means a governance structure used to manage land use, development, and other tribal government decision-making, such as a tribal master plan, a capital improvement plan, an emergency operations plan, or other long-range plans.*

Section III: Mitigation Strategy

1. Trinidad Rancheria Comprehensive Community-Based Plan

Trinidad Rancheria's main efforts in integrating mitigation actions have come through the Trinidad Rancheria Comprehensive Community-Based Plan; the Transportation and Land Use Management, Environmental, Tribal Administration, and Tribal Programs Departments; and The Heights Casino/Sunset Restaurant and Trinidad Harbor enterprises. The Tribe's mitigation planning process is integrated with other ongoing planning efforts summarized in Table 48. Proposed projects comply with the Uniform Building Code, State Title 24 requirements, the Americans with Disabilities Act (ADA) requirements and assuring project compliance with the California Environmental Quality Act (CEQA), conducting design review of proposed buildings and provide staffing assistance. These efforts include but are not limited to:

Table 48. Significant Actions that Integrate with the TRMHMP.

Objective	Action
Stable ingress and egress	Development of improved access to the Rancheria to increase the reliability and capability of access while providing regional transportation benefits.
Protection of Infrastructure	Assessment and stabilization of current infrastructure; roads and pier, water and wastewater.
Protection against Land and improvement losses	Stabilization of land for home sites and business.
Character Development / Community Awareness and Preparedness.	Tribal awareness in preparedness .
Financial Stability	Through the HMP we will help create the financial stability of the Tribe, its business development and its members.

The Trinidad Rancheria Comprehensive Community-Based Plan was a whole community effort that provides a concept for future development and growth through sustainable, low-impact means. One major project out of the effort is a Highway-101 onramp/offramp directly into the Main Parcel. Given the vulnerability of Scenic Drive, this project is crucial for providing a survivable means for accessing Tribal Operations and other enterprises on the Main Parcel. A Scenic Drive failure during a disaster would not only cutoff Trinidad Rancheria Operations, but would also strand hundreds of tribal members, employees, and visitors. The goals of the plan are as follows:

- **Goal 1.01.A — Promote Sense of Place and Connectedness**
    - Policy 1.01.A-1 — Manage growth to maintain the unique qualities and character of the Trinidad Rancheria as a small coastal Native American community.

- Policy 1.01.A-2 — In developing land, respect ceremonial areas and individual site features and characteristics, including topography, natural features, and the presence of sensitive biological resources.

- **Goal 1.01.B — Promote Efficient Land Uses**
  - Policy 1.01.B-1 — Encourage innovative land use patterns including planned developments, mixed uses, and compact development that promote proximity of destinations and linkages.
  - Policy 1.01.B-2 — Develop Design Plans & Development Standards for five special study areas:
    1. Trinidad Pier & Harbor
    2. Tribal multi-purpose community center
    3. Tribal incubator & community retail
    4. Tribal casino, hotel, RV park, mini mart & gas station
    5. New housing on Archer Road
  - Policy 1.01.B-3 — All new development shall meet community standards for design quality, open space preservation, and promotion of a livable, sustainable community.
  - Policy 1.01.B-4 — For new commercial development, locate buildings closer to the street, where appropriate, and locate off-street parking areas to the rear of commercial buildings, where feasible.
  - Policy 1.01.B-5 — Encourage use of "green construction" and low impact development techniques to reduce the environmental impacts of construction activity.
  - Policy 1.01.B-6 — Encourage all additions and new development to follow green building practices for design, construction, and operation and to incorporate as many LEED prerequisites and credits as feasible.

- **Goal 1.01.C — Avoid Hazards, Nuisances, and Environmental Degradation**
  - Policy 1.01.C-1 — In developing land, respect natural hazards and constraints (steep slopes, fault lines, etc.), avoid nuisance level conditions such as offsite light and glare, excessive noise, etc., and employ Best Management Practices for storm water management.
  - Policy 1.01.C-2 — Reduce overdependence on automobiles and greenhouse gas emissions by developing walking and bicycling trails that connect to primary destinations on the Rancheria.
  - Policy 1.01.C-3 — Encourage energy efficiency and water conservation for new development and by retrofitting existing facilities and structures.

  - Policy 1.01.C-4 — For landscaping, avoid exotic plants in favor of native plants. Remove invasive exotic species on a regular basis.
  - Policy 1.01.C-5 — Adopt a noise ordinance for nuisance level noise conditions on Rancheria land. (Model Noise Ordinances are available through the State Office of Noise Control).

- **Goal 1.01.D — Development Project Review and Approval**
  - Policy 1.01.D-1 — Develop a structure and process for reviewing proposed land use development projects to ensure compliance with Comprehensive Plan policies and Integrated Development Standards.
  - Policy 1.01.D-2 — Adopt development standards to implement the Land Use Element and for use in reviewing proposed development projects.

2. Transportation and Land Use Management Department

Transportation systems are critical lifelines during disasters. Not only has the Transportation and Land Use Management Department sought to ensure roads are maintained to survive natural hazards (as funding permits), but transportation funds have been used for mitigation-related efforts such as installing the survivable, sustainable, environmentally friendly pier. Trinidad Rancheria continuously seeks opportunities for these dual-use funds.

3. Environmental Department

Like transportation funds, some EPA funds can also be dual-use and support mitigation activities. For example, the Environmental Department sustains the tribe's GIS capability. In addition, the Environmental Department has used natural means to control storm runoff, lessening the amount of erosion.

4. Tribal Administration and Tribal Programs

Tribal policies promulgated since the last TRMHMP update have mandated that employees must respond to disasters. The Tribal Administration and Programs' monthly packets of information for tribal members have supported mitigation efforts. Furthermore, facilities are focal points for posting mitigation information – especially the library since many tribal members rely upon that facility for internet access. To enhance a sustainable, low impact way of life, Tribal Programs has developed a rain garden as well as gardens to cultivate and protect traditional flora.

5. Casino, Restaurant, and Harbor Enterprises

Because they are outward facing and must care for visitors and customers, the casino, restaurant, and harbor enterprises incorporated previous plan actions, especially in operational coordination, public information and warning, and evacuation. Casino Security maintains communications with the external law enforcement and emergency services agencies it relies upon. They also garnered a full-time deputy sheriff presence beginning in 2019. Similarly, the Trinidad Harbor Operations have embraces mitigation actions such as pulling up moorings during the stormy winter season, providing safety information to boating customers, and engaging in local/state tsunami drills.

Goal #2 (repeated here) is focused on incorporating hazard mitigation into the very culture of the Tribe.

6. Goal #2: Promote Sustainable Living

Description: Promote development in a sustainable manner.

a) Objective #2.1

Description: Incorporate hazard mitigation into long-range planning and development activities

- **Action 2.1.1:** Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP - Trinidad Rancheria Comprehensive Community-Based Plan, Energy and Mineral Development Plan, Chemical Response Plan, Transportation Plan, Waterfront Operations Plan (Area of Special Biological Significance - ASBS), etc.
    - **Benefit-Cost:** High benefit / Low cost (focus area of each plan development/update)

b) Objective #2.2

Description: Promote beneficial use of hazardous areas while expanding open space and recreational opportunities

- **Action 2.2.1:** Use low impact development solutions to recover/stabilize areas.
    - **Benefit-Cost:** High benefit – Moderate cost (landscaping, planting, etc.)

c) Objective #2.3

Section III: Mitigation Strategy

Description: Utilize regulatory approaches to prevent creation of future hazards to life and property

- **Action 2.3.1:** Review and update of policies regarding building codes, sustainable landscaping, etc.
    - **Benefit-Cost:** High benefit / Moderate cost
- **Action 2.3.2:** New policies to avoid building in hazard areas
    - **Benefit-Cost:** High benefit / Low cost

Table 49 summarizes the planning actions and responsible departments / programs. As depicted, several departments / programs are responsible for integrated actions into other planning mechanisms.

The real engine for integrating TRMHMP actions into other planning mechanisms is it is driven from the top of the government. As seen in Actions 2.3.1, 2.3.2, and 4.3.1,the CEO, Tribal Council, and Tribal Administration are responsible for the overall integration effort. In addition, some of the few actions that are the sole responsibility of Emergency Services are to update and integrate the family of mitigation, preparedness, response, and recovery plans. Actions 1.3.1 and 2.1.1). Emergency Services is also the lead on integrating with external partners.

Table 49. Actions Integrated Into Other Planning Mechanisms.

Action	Responsible Department / Program
Action 1.3.1: Develop / update emergency plans (Emergency Operations Plans, Continuity of Operations Plan, etc.).	Emergency Services
Action 2.1.1: Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP.	Emergency Services
Action 2.3.1: Review and update of policies regarding building codes, sustainable landscaping, etc.	CEO / Tribal Council
Action 2.3.2: Incorporate mitigation actions when building in hazard areas.	CEO / Tribal Council
Action 4.1.1: Attend and/or host Humboldt Operational Area disaster preparedness events. Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events.	Emergency Services
Action 4.3.1: Make hazard mitigation concerns standard agenda/document items.	CEO / Tribal Council / Tribal Administration

Section III: Mitigation Strategy

The effort to achieve the objective to, "Incorporate hazard mitigation into long-range planning and development activities" has begun with this hazard mitigation plan update with capability assessments:

- **Planning and Regulatory Capabilities**
    - Planning – Table 31
    - Regulatory (Building Codes) – Table 32
    - Land Use – Table 33
- **Legal/Regulatory, Codes, and Ordinances, and Plans**
    - Administrative – Table 34
    - Staff – Table 35
    - Technical – Table 36
- **Financial Capabilities**
    - Table 37
- **Education and Outreach Capabilities**
    - Table 39
- **NFIP**
    - N/A

As part of the TRMHMP maintenance strategy, the Planning Team will meet regularly to ensure hazard mitigation is integrated into its future planning activities. The Rancheria will work to incorporate, where applicable, this TRMHMP into the planning and regulatory mechanisms identified previously identified as well as others as appropriate.

Throughout the TRMHMP maintenance cycle, the hazard mitigation goals and actions will be referenced or included in the general operations of the Rancheria. The Rancheria will work with other agencies to identify opportunities as outlined below:

- Update work plans, policies, or procedures to include hazard mitigation concepts;
- Establish mitigation funding into operational and other types of tribal budgets;
- Issue plans, policies, regulations, or other directives to carry out mitigation actions;
- Add hazard mitigation elements to redevelopment plans.

The TRMHMP will function as a stand-alone document subject to its own review and update schedule and will serve as a reference for other mitigation planning needs of the Tribe. Whenever possible, the Rancheria will endeavor to incorporate mitigation actions and projects

identified in the TRMHMP into existing Rancheria's planning mechanisms, as they become available, including but not limited to:

- Development of future land-use plans;
- Future programming of capital improvement projects.

7. Continued Member and Stakeholder Outreach/Involvement

The Rancheria is committed to keeping the public and stakeholders informed about hazards and mitigation planning efforts, actions, and projects. For the Rancheria, one of the most effective ways to engage the public and stakeholders and disseminate information is through the Community Council.

Emergency Services shall ensure the Tribal Council, members, and stakeholders are kept current TRMHMP updates and are provided the opportunity to participate in the update process to the appropriate degree. The Plan's annual review and evaluation will be announced to the local media through a variety of outlets.

In order to continually engage the public and stakeholders, the Tribe shall pursue the following opportunities whenever possible and appropriate, but not limited to:

- Present an annual report summarizing the TRMHMP evaluation and mitigation action progress to the Tribal Council.
- Participate in Humboldt County's hazard mitigation and disaster preparedness efforts.
- Provide a hard copy of the TRMHMP for public review.
- Post the TRMHMP on the community website.

8. Integration with the National Preparedness System

The Rancheria developed this MHMP in conjunction with its 2024 Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR). This represents a new effort in integrating the MHMP with other planning mechanisms. Trinidad Rancheria has adopted FEMA's National Preparedness System (NPS) as a framework for expanding its emergency management program (Figure 103).

Section III: Mitigation Strategy

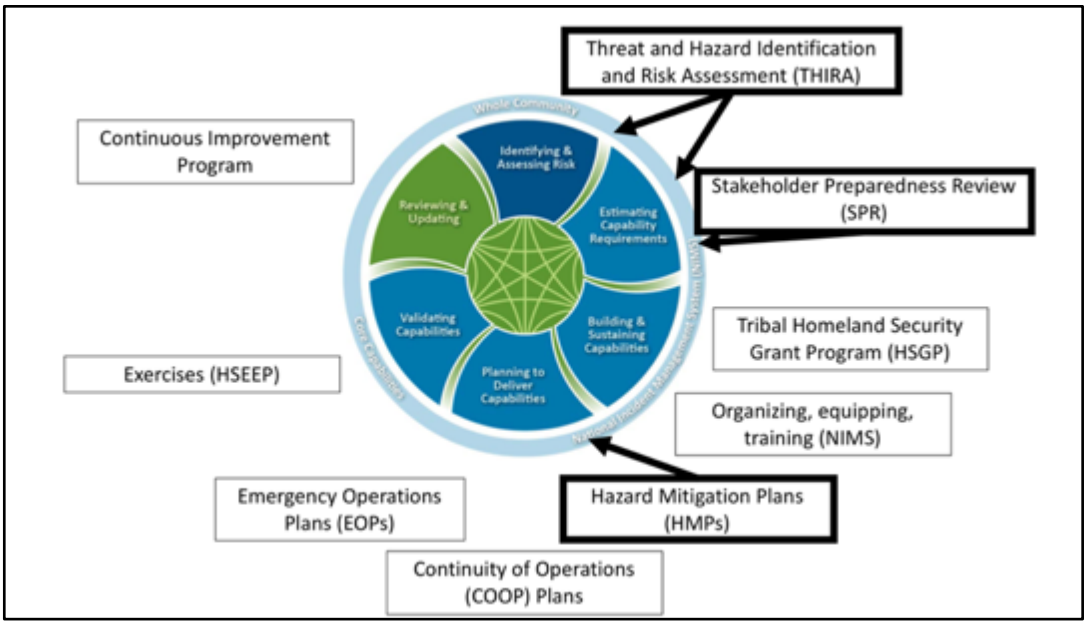


Figure 103. National Preparedness System.

Having linked TRMHMP risks and capabilities with its THIRA and SPR respectively, Trinidad Rancheria will follow up with developing its family of plans such as updating its Emergency Operations Plan (EOP) and Continuity of Operations (COOP) Plan using those same risks and capabilities. Future NPS elements such as "Building and Sustaining Capabilities" grant applications are enabled through the THIRA/SPR and MHMP work. Exercise will follow in "Validating Capabilities," and the NPS cycle will begin again after "Reviewing and Updating."

Section III: Mitigation Strategy

I. Progress Review

Element	Requirements
C7. Does the plan describe a system for reviewing progress on achieving goals as well as activities and projects identified in the mitigation strategy, including monitoring implementation of mitigation measures and project closeouts? 44 CFR §§ 201.7(c)(4)(ii) and 201.7 (c)(4)(v) ***Intent:*** *To establish a standardized system to review activities and projects and follow through on project implementation and completion.*	a. The plan shall describe the system for tracking the implementation of the mitigation activities and projects identified in the mitigation strategy. This includes all mitigation activities, not just those funded by FEMA. b. The system shall include the following: 1. A schedule; 2. Tribal department or tribal office responsible for coordination (or non-tribal entity or agency, if the tribe allows); 3. Role of the agencies/offices identified in the mitigation strategy as responsible for implementation of actions; and 4. Project closeout procedures. *An example of a system could include submission of periodic reports, site visits, and invoices submitted by tribal offices responsible for implementing mitigation actions and/or project closeouts*.

Trinidad Rancheria intends to proactively manage implementation of the actions as it strives to reach its goals and objectives. The Planning Team and Emergency Services are responsible for tracking the implementation of mitigation activities, including monitoring implementation of mitigation measures and project closeouts.

The tracking system will include a schedule, identify the tribal department/office responsible for coordination, describe the role of the agencies/offices identified in the mitigation strategy and include project closeout procedures.

Section III: Mitigation Strategy

Table 50 has the most significant recurring milestones for reviewing the implementation of the MHMP.

Table 50. Plan Monitoring, Evaluating, and Updating Schedule.		
Plan Monitoring	**Point of Contact**	**Timeline**
Planning Team action item accomplishment review.	The respective POC responsible for each action item.	Quarterly Planning Team meetings.
Tribal Council action item accomplishment report.	Planning Team	Semi-annual Tribal Council progress report.
Public action item accomplishment review	Planning Team	Annual public progress report.
Ad hoc plan updates	Planning Team	As required to ensure the plan is relevant.
FEMA-required five-year update	Planning Team	Every five years.

The roles of the various departments and a macro-level monitoring schedule are in Table 51. The worksheet in Appendix E will be used by the respective POCs to manage and report on the completion and closeout of their actions.

Table 51. Roles and Responsibilities for Hazard Mitigation Action Implementation.		
Department / Office	**Mitigation Responsibility**	**Activity**
Tribal Council	Overall tribal authority	Approve activities as required by tribal laws and policies
Administration	Monitor actions	● Provide a vehicle for the Planning Team to deliver its semi-annual progress updates. ● Provide a forum for direct community feedback.
Emergency Services	Planning Team coordination	● Provide guidance to the Planning Team. ● Chair Planning Team meetings.
Planning Team	Mitigation action coordination.	● Monitor, track, coordinate, and make recommendations on MHMP / action updates. ● Hold quarterly coordination meetings.

Table 51. Roles and Responsibilities for Hazard Mitigation Action Implementation.		
Department / Office	**Mitigation Responsibility**	**Activity**
Assigned Departments / Programs	Support action Points of Contact in complement assigned actions.	● Implement assigned actions and report on their progress through closeout. ● Report on the action implementation progress to the Planning Team. ● Support actions according to day-to-day responsibilities – finance, facilities, operations, housing, etc.
Action Points of Contact	Implement assigned actions.	● Implement assigned actions. ● Track the progress of the action implementation via the worksheet in Appendix E. ● Report on the action implementation progress through their respective departments to the Planning Team.

IV. Plan Updates

A. Changes in Development

Element	Requirements
D1. Was the plan revised to reflect changes in development? 44 CFR § 201.7(d)(3) ***Intent*: To ensure that the mitigation strategy continues to address the risk and vulnerabilities to existing and potential development.**	The plan shall describe changes in development that have occurred in hazard prone areas since the last plan was approved. Not all development will affect a tribal government's vulnerability. If no changes are identified, plan updates shall validate the information in the previously approved plan. ***Changes in development*** *means recent development (for example, construction completed since the last plan was approved), potential development (for example, development planned or under consideration by the tribal government) or conditions that may affect the risks and vulnerabilities of the tribal planning area (for example, climate variability and/or declining populations or projected increases), and new data regarding the type, location, occurrence, and extent of hazards that has become available since the last plan was developed or as a result of disaster events.*

Trinidad Rancheria has had little development in hazard prone areas since the last update.

Scenic Drive. Since the last TRMHMP update, Trinidad Rancheria has taken positive steps to mitigate hazards. For example, the Rancheria plans to relocate three (3) homes away from the edge of the slope. The most significant hazard area is the hillside along Scenic Drive. Tribal laws and ordnances have controlled and restricted development along this hazard zone. Future development will be in full consideration of hazard mitigation actions. As Scenic Drive lies in the jurisdiction of Humboldt County, City of Trinidad and the Trinidad Rancheria responsibility for maintenance and repairs lies between the three. Trinidad Rancheria uses transportation funds to conduct regular, but minor actions such as keeping culverts and drainage areas clear.

Trinidad Harbor. Trinidad Harbor Operations lie in a tsunami evacuation zone. On May 1, 2024, the US Department of the Interior, Bureau of Indian Affairs has placed the Trinidad Harbor Properties into Trust for the Trinidad Rancheria. Since that date, Trinidad Rancheria has conducted grading work on the parking lot that should enhance ability of the water treatment system to catch and treat storm runoff before it enters Trinidad Harbor.

Section IV: Plan Updates

Main Parcel. Since the last TRMHMP update, Trinidad Rancheria renovated the building housing Social Services and the EOC. The building is not in a specific hazard prone area and the renovation hardens the building against disasters and has emergency power. In addition, Trinidad Rancheria built a maintenance shop adjacent to the EOC/Social Services building. It is not in a specific hazard prone zone and has emergency power.

While still in the planning phase, Trinidad Rancheria seeks to build a hotel adjacent to The Heights Casino. The Rancheria is conducting the development in a sustainable manner.

While still in the planning phase, Trinidad Rancheria seeks to build direct access to Highway-101. The access would provide a redundant entry and exit point to the Rancheria and mitigate the hazard presented by Scenic Drive – the Rancheria's #1 concern. The project is reflected in action 1.3.8: New access to HWY-101 for redundant, safe evacuation and ingress.

The following actions specifically address minimizing development in hazard prone areas:

- **Action 2.2.1:** Use low impact development solutions to recover/stabilize areas.
- **Action 2.3.1:** Review and update of policies regarding building codes, sustainable landscaping, etc.
- **Action 2.3.2:** New policies to avoid building in hazard areas.

Section IV: Plan Updates

B. Progress in Tribal Mitigation Efforts

Element	Requirements
D2. Was the plan revised to reflect progress in tribal mitigation efforts? 44 CFR §§ 201.7(d)(3) and 201.7(c)(4)(iii) ***Intent: To evaluate and demonstrate progress made in the past 5 years in achieving goals and implementing actions outlined in the mitigation strategy.***	a. The plan shall describe the status of each mitigation action and/or project identified in the previous plan. For those actions not completed, the plan shall provide a narrative describing the status (for example, a description of why the action is no longer relevant). b. The plan shall describe how the tribal government incorporated the previous mitigation plan into other planning mechanisms, as applicable.

Of note, the Tribe has already acted upon a new, sovereignty-based objective identified in this planning process:

Objective #1.5: Promote activities that protect tribal cultural resources and expand tribal sovereignty through sustainable living practices.

Based on a whole community workshop discussion, the Tribe began dehydrating great quantities of food with expiring shelf lives. While this is just one action, it demonstrates the Tribe's sincerity in accomplishing mitigation actions.

The Trinidad Rancheria actively seeks to integrate mitigation actions in all of its infrastructure efforts and built this Plan on the previous one. Table 52 provides a status of the projects identified in the previous plan. As with this current Plan, there are a number of enduring actions that are identified as "on going." These are at the forefront of routine operations.

Table 52. Status of Previously Identified Mitigation Actions.

Mitigation Action	Timeframe	Status
Action 1.1: Align updates to Trinidad Rancheria's family of plans to the Trinidad Rancheria MHMP.	Short-term	Ongoing – annual Integrated Preparedness Plan.
Action 1.2: Use low impact development solutions to recover/stabilize areas.	Mid-term	Ongoing – the control of invasive species and planting of native species reduced the fore, disease, and erosion hazards.
Action 1.3.1: Review and update of policies regarding building codes, sustainable landscaping, etc.	Short-term	Ongoing – central to current development plans as described in Section IV, A.
Action 1.3.2: Incorporate mitigation actions when building in hazard areas.	Short-term	Ongoing – central to current development plans as described in Section IV, A.

Table 52. Status of Previously Identified Mitigation Actions.		
Mitigation Action	**Timeframe**	**Status**
Action 2.1.1: Continue, expand and improve semi-annual tsunami drills.	Short-term	Ongoing – conducted in conjunction with Humboldt County.
Action 2.1.2: Improve tsunami signage	Mid-term	Not started. Having the harbor now in trust, provides greater authority.
Action 2.1.3: Incorporate IPAWS or subscription-based warning system using multiple means of communication – landline, cell, email, internet pages, etc.	Mid-term	In process – systems are in place and Emergency Services staff are receiving training.
Action 2.1.4: Organize neighborhood teams.	Short-term	Not started – now a 2025 focus using THSGP funds.
Action 2.2.1: Annual winter storm preparation such as clearing out culverts and other drainage.	Short-term	Ongoing annually.
Action 2.2.2: Maintain culverts /drainage along Scenic Drive and Archer Road.	Short-term	Ongoing annually.
Action 2.2.3: Annual fire season defensible space debris clearing.	Short-term	Ongoing annually.
Action 2.2.4: Slope stabilization/armoring to prevent landslides on the Main Parcel (Scenic Drive, Cher-Ae Lane, Seascape House, Proper housing) and protect housing and cultural resources.	Mid-term	• Complete on Cher-Ae Lane. • Trinidad Rancheria received a BRIC award to further study wide scale slope stabilization and armoring.
Action 2.2.5: Slope stabilization/armoring to prevent landslides on Trinidad Harbor property (Seascape House, Road to Seascape House).	Mid-term	Not started. Willa dress once the Scenic Drive project is complete.
Action 2.2.6: Develop an accessible tsunami evacuation path from the harbor.	Mid-term	Not started. Having the harbor now in trust, provides greater authority.
Action 2.2.7: Build new structures at risk of flood/tsunami considering mitigation measures (build new structures above inundation zone)	Long-term	Complete/ongoing. Building renovations and construction were completed outside of hazard zones.
Action 2.2.8: Armoring the slope to protect against long-term coastline erosion	Long-term	Trinidad Rancheria received a BRIC award to further study wide scale slope stabilization and armoring.

Table 52. Status of Previously Identified Mitigation Actions.		
Mitigation Action	**Timeframe**	**Status**
Action 2.2.9: Relocate people/structures in areas of repeat hazard events (tsunami zone/slide areas)	Long-term	Ongoing. A home was moved out of a hazard zone along Scenic Drive.
Action 2.2.10: Acquire more land away from predicted coastline erosion zone	Long-term	Not started. IN consideration for future development.
Action 2.3.1: Develop / update emergency plans (Emergency Operations Plans, Continuity of Operations Plan, etc.)	Short-term	Completed
Action 2.3.2: Purchase emergency generators.	Mid-term	Completed for Tribal Operations; the EOC/Social Services/maintenance shop; and Trinidad Harbor.
Action 2.3.3: Re-certify as a Red Cross shelter	Mid-term	In process. Coordination with the RAC is ongoing.
Action 2.3.4: Catalogue / acquire / protect living samples of critical species	Short-term	Ongoing. Planning is also ongoing for an interpretive center.
Action 2.3.5: New access to HWY-101 for redundant, safe evacuation and ingress	Long-term	In planning.
Action 2.3.6: Grow / protect critical species for rapid recovery	Mid-term	In process. Multiple, small gardens of native plants have been planted and are maintained.
Action 2.3.7: Install survivable, redundant communications systems at Tribal Operations (including the library)	Mid-term	Ongoing. Acquired P25 compliant radios via THSGP funds.
Action 2.3.8: Harden Trinidad Harbor facilities (crane, water treatment, etc.)	Long-term	Not started.
Action 2.3.9: Upgrade Tribal Operations facilities to more survivable standards	Long-term	In planning process.
Action 3.1: Hold annual public meetings to update the community on status of HMP actions	Short-term	Ongoing. Community Council meetings. Disrupted during COVID-19.
Action 3.2: Engage in FEMA's semi-annual preparedness month activities (September and April) to move community members from awareness to action.	Short-term	Restarting. Disrupted during COVID-19.

Section IV: Plan Updates

Table 52. Status of Previously Identified Mitigation Actions.		
Mitigation Action	**Timeframe**	**Status**
Action 3.3: Hold semi-annual community-based hazard mitigation days such as fire defensible space cleanup and winter storm preparation.	Short-term	Ongoing. Environmental Department and Housing have hazard reduction programs.
Action 4.1: Attend and/or host Humboldt Operational Area disaster preparedness events. Invite Humboldt Operational Area partners to Trinidad Rancheria disaster preparedness events	Short-term	Ongoing. Emergency Services has also participated in exercises.
Action 4.2: Develop a Tribal Community Emergency Response Team (CERT) program or join a multi-jurisdictional CERT program.	Mid-term	In planning. This has begun since receiving THSGP funds in 2024.
Action 4.3: Make hazard mitigation concerns standard agenda/document items.	Short-term	Ongoing.
Action 5.1.1: Provide and/or schedule FEMA emergency management training (L-583, etc.) for Tribal Council members.	Short-term	Coordinating training with Blue Lake rancheria.
Action 5.1.2: Reconstitute the standing OES Team	Short-term	Complete. Planning meetings interrupted during COVID-019.
Action 5.1.3: Hire/assign a full-time Emergency Services Director	Mid-term	In process. Hired an Emergency Services Technician.

Section IV: Plan Updates

C. Plan Revision Reflecting Changing Priorities

Element	Requirements
D3. Was the plan revised to reflect changes in priorities? 44 CFR § 201.7(d)(3) ***Intent:*** *To ensure the plan reflects current conditions, including financial, legal, and political realities as well as post-disaster conditions.*	The plan shall describe if and how any priorities changed (for example, due to disaster events or changes in leadership) since the plan was previously approved. If no changes in priorities are necessary, plan updates shall validate the information in the previously approved plan.

Overall, the priorities remain the same as the Rancheria has been successfully executing the previous TRMHMP. However, Goals #1 and #2 were swapped to reflect the first priority being to protect lives and property.

1. Legacy Goals

The previous goals were intentionally not prioritized and "Promote Sustainable Living" was #1 to reflect a global objective.

Goal #1: Promote Sustainable Living *- Promote development in a sustainable manner.*

Goal #2: Protect Lives and Property *- Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to hazards.*

Goal #3: Increase Public Awareness of Local Hazards *- Increase public awareness, understanding, support, and demand for hazard mitigation.*

Goal #4: Partnerships and Implementation *- Build and support local partnerships to continuously become less vulnerable to hazards.*

Goal #5: Strengthen Emergency Services Capability *- Establish policies and procedures to ensure mitigation projects for critical facilities, services and infrastructure.*

2. New Goals

Goal #1: Protect Lives and Property *- Implement activities that assist in protecting lives by making homes; businesses; infrastructure; critical facilities; natural and cultural resources; and other property more resistant to hazards.*

Goal #2: Promote Sustainable Living *- Promote development in a sustainable manner.*

Goal #3: Increase Public Awareness of Local Hazards *- Increase public awareness, understanding, support, and demand for hazard mitigation.*

Goal #4: Enhance Partnerships and Implementation *- Build and support local partnerships to continuously become less vulnerable to hazards.*

Goal #5: Strengthen Emergency Services Capability *- Establish policies and procedures to ensure mitigation projects for critical facilities, services and infrastructure.*

V. Assurances and Plan Adoption

A. Assurance of Federal Guidance Compliance and Required Amendments

Element	Requirements
E1. Does the plan include assurances that the tribal government 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? 44 CFR § 201.7(c)(6)	The plan shall include assurances which state that the tribal government 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. The tribal government will amend its mitigation plan whenever necessary to reflect changes in tribal or federal laws and statutes.

The Tribal Council of the Cher-Ae Heights Indian Community of the Trinidad Rancheria assures that Trinidad Rancheria will comply with all applicable Federal statutes and regulations in the monitoring, evaluation, and updating of this plan (Table 53). Furthermore, Trinidad Rancheria will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, including DMA2K requirements (CFR 201.7(c)(6)), and 2 CFR Parts 200 and 3002, and will amend its plan whenever necessary to reflect changes in tribal or Federal laws and statutes.

B. Adoption by Trinidad Rancheria

The adoption resolution is in Appendix A.

Table 53. Trinidad Rancheria MHMP Adoption.

Internal Approval and Tribal Adoption of the Multi-Hazard Mitigation Plan		
Trinidad Rancheria Planning Team	The amended TRMHMP was approved by the Planning Team on _____. The resources and information cited in the mitigation plan provide a strong local perspective and help identify strategies and activities to make the Tribe and Tribal members more disaster resilient.	
Trinidad Rancheria Tribal Council	The amended TRMHMP was adopted by the Cher-Ae Heights Indian Community of the Trinidad Rancheria Tribal Council on _____.	Resolution XX __-24

Section V: Assurances and Plan Adoption

Appendix A: Multi-Hazard Mitigation Plan Adoption

TBD

Appendix B: Trinidad Rancheria Risk Survey

Overview

Thank you for helping put Cher-Ae Heights Indian Community of the Trinidad Rancheria ("Trinidad Rancheria") on the path to be one of the most resilient tribes in the United States. Right now, we are focused on developing a risk and capability assessment that will both inform our emergency plans and fulfills a Tribal Homeland Security Grant Program (THSGP) requirement. We would like to know what threats and hazards are of most concern to Trinidad Rancheria. For example, a utility failure may cause us to find alternate power sources, but a tsunami may require an evacuation of Trinidad Harbor.

This risk survey uses the Trinidad Rancheria's 2019 Hazard Mitigation Plan and its 2023 Threat and Hazard Identification and Risk Assessment as a baseline for identifying risks and includes additional threat and hazards that may be of concern. At this point you may be thinking, "I can't help; I don't know anything about this." Fear not, that puts you in with a big club of 99+% of the population. The very fact that you are a member, staff, or partner of Trinidad Rancheria makes you important in the risk management process. Chances are that your unique experience and suggestion may provide insight that nobody else has thought of.

Trinidad Rancheria has contracted Wise Oak Consulting, L.L.C.[SM], to help us with this process.

This survey only has 18 questions. However, it involves completing a matrix that will help us put together the puzzle that is the Trinidad Rancheria's risks. It should take 15-20 minutes to complete. Don't worry about answering all of the questions – just answer those you feel comfortable with. You may have some highly-specialized experience that is specific to just one area of the assessment – excellent; just work on that.

Appendix B: Trinidad Rancheria Risk Survey

Privacy Notice

This survey collects no personally identifiable information, and individual answers will not be shared outside of Trinidad Rancheria. The demographic questions are designed to simply make sure we are involving the whole community and determining how you got your insight.

Name	
Email Address	
Organization	
Title/Position	

Either place a check next to where you live or write in an answer.

On Reservation	
Off Reservation, Humboldt County, CA	
Elsewhere in California	
Elsewhere in the U.S.	

Other: _____

What is your occupational background and/or education? Circle all that apply.

Agriculture	Firefighting	Information	Public Works
Construction	Fishing	Law Enforcement	Real Estate renting and leasing
Education - College	Forestry / Land Management	Leisure and Hospitality	Retail trade
Education K-12	Government - city	Manufacturing	Science
Construction	Government - county	Natural Resources and Mining	Transportation and warehousing
Emergency Management	Government - Federal	Non-profit Organization	Tribal Member
Emergency Medical Services	Government - state	Non-tribal member residing or working on tribal land/businesses	Utilities
Facility Maintenance	Government – tribal nation	Parks and Recreation	Volunteer Organization
Faith-based community	Healthcare and social services	Planning	Other services
Financial Activities	Hunting	Professional and Business Services	

Other: _____

Appendix B: Trinidad Rancheria Risk Survey

Do you work with people with disabilities and others with access and functional needs? (Circle one answer) **Yes / No**

Do you identify as a person with disabilities or others with access and functional needs? (Circle one answer) **Yes / No / Prefer not to answer**

Appendix B: Trinidad Rancheria Risk Survey

Describe Hazards

We want to identify the hazards of concern for Trinidad Rancheria. We will begin by describing the threats and hazards in terms of location, extent, and probability of future occurrence. The areas of concern for the region vary in both geographic location, elevation, and topography. Therefore, consider the general region of Trinidad Rancheria in your assessment, not just where you might live, work, or visit.

You will be asked to evaluate a number of hazards based on their location (how much land is affected), extent (how big the hazard is), and probability of occurrence per the guidelines below.

Natural Hazards

Location – check the box (Extensive, Moderate, Limited) that corresponds to your estimate for how much of Trinidad Rancheria is affected by each hazard based on the "Location" definitions below.

Location Definitions	
Extensive	Extensive: 50% or more of Trinidad Rancheria land/assets affected
Moderate	Moderate: 25%-50% of Trinidad Rancheria land/assets affected
Limited	Limited: 25% or less of Trinidad Rancheria land/assets affected

Natural Hazards Location			
Hazard	**Your Estimate**		
	Extensive	**Moderate**	**Limited**
Coastline Erosion			
Drought			
Earthquake			
Epidemic			
Flood			
Land Animal Disease			
Marine Animal Disease			
Sea Level Rise			
Severe Winter Storms			
Smoke			
Tsunami			
Wildfires			

Appendix B: Trinidad Rancheria Risk Survey

Extent

Hazard Extent – the magnitude of the hazard (Richter Scale, tsunami height, etc.). Please check the box (Catastrophic, Critical, Limited, Negligible) that corresponds to your estimate for how bad you believe the hazard is for Trinidad Rancheria based on the "Extent" definitions below.

Extent Definitions	
Catastrophic	• Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). • Injuries or illnesses result in permanent disability and multiple deaths. • Overwhelming damage requires Federal assistance and requires months to years to recover.
Critical	• Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). • Injuries or illnesses result in permanent disability and at least one death. • Shut down of critical facilities for more than 1 week and less than 1 month.
Limited	• Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). • Injuries or illnesses do not result in permanent disability and there are no deaths. • Moderate quality of life lost. • Shut down of critical facilities for more than 1 day and less than 1 week.
Negligible	• Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths. • Negligible quality of life lost. Shut down of critical facilities for less than 24 hours.

Natural Hazards Extent				
Hazard	**Your Estimate**			
	Catastrophic	**Critical**	**Limited**	**Negligible**
Coastline Erosion				
Drought				
Earthquake				
Epidemic				
Flood				
Land Animal Disease				
Marine Animal Disease				
Sea Level Rise				
Severe Winter Storms				
Smoke				
Tsunami				
Wildfires				

Appendix B: Trinidad Rancheria Risk Survey

Probability of Occurrence

Please check the box (Highly Likely, Likely, Possibly, Unlikely) that corresponds to your estimate for how likely you believe the hazard is for Trinidad Rancheria based on the "Probability" definitions below.

Probability Definitions	
Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability that is greater than 10%.
Likely	Between Occasional occurrences with at least two or more documented historic events. Annual probability that is between 10% and 1%.
Possibly	Rare occurrences with at least one documented or anecdotal historic event. Annual probability that is between 1% and .1%.
Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than .1%.

Natural Hazards Probability of Occurrence				
Hazard	**Your Estimate**			
	Highly Likely	**Likely**	**Possibly**	**Unlikely**
Coastline Erosion				
Drought				
Earthquake				
Epidemic				
Flood				
Land Animal Disease				
Marine Animal Disease				
Sea Level Rise				
Severe Winter Storms				
Smoke				
Tsunami				
Wildfires				

Appendix B: Trinidad Rancheria Risk Survey

Natural Hazards of Most Concern

On a scale of 1 to 5, select how concerned you are about each hazard. 1 - you are not really worried about this hazard; 5 - this is the hazard that concerns you most.

Natural Hazards of Most Concern					
Hazard	**Not Concerned**		**Concerned, but not the worst hazard**		**Very Concerned**
	1	2	3	4	5
Coastline Erosion					
Drought					
Earthquake					
Epidemic					
Flood					
Land Animal Disease					
Marine Animal Disease					
Sea Level Rise					
Severe Winter Storms					
Smoke					
Tsunami					
Wildfires					

Appendix B: Trinidad Rancheria Risk Survey

Technological Hazards

This step is the same as for natural hazards, only you will accomplish it for technological hazards. Technological hazards are accidents such as oil spills or other hazardous materials (HAZMAT) spills; utility failures, dam failures, etc.

You will be asked to evaluate a number of hazards based on their location (how much of Trinidad Rancheria is affected), extent (how big the hazard is), and probability of occurrence.

Location

Please check the box (Extensive, Moderate, Limited) that corresponds to your estimate for how much of Trinidad Rancheria is affected by each hazard based on the "Location" definitions below.

Location Definitions	
Extensive	Extensive: 50% or more of Trinidad Rancheria land/assets affected
Moderate	Moderate: 25%-50% of Trinidad Rancheria land/assets affected
Limited	Limited: 25% or less of Trinidad Rancheria land/assets affected

Technical Hazards Location			
Hazard	**Your Estimate**		
	Extensive	**Moderate**	**Limited**
Hazardous Materials Release - Land			
Hazardous Materials Release - Marine			
Power Failure			
Structure Fire			
Transportation Accident			

Appendix B: Trinidad Rancheria Risk Survey

Extent

Hazard Extent – the magnitude of the hazard (Richter Scale, tsunami height, etc.). Please check the box (Catastrophic, Critical, Limited, Negligible) that corresponds to your estimate for how bad you believe the hazard is for Trinidad Rancheria based on the "Extent" definitions below.

Extent Definitions	
Catastrophic	• Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). • Injuries or illnesses result in permanent disability and multiple deaths. • Overwhelming damage requires Federal assistance and requires months to years to recover.
Critical	• Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). • Injuries or illnesses result in permanent disability and at least one death. • Shut down of critical facilities for more than 1 week and less than 1 month.
Limited	• Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). • Injuries or illnesses do not result in permanent disability and there are no deaths. • Moderate quality of life lost. • Shut down of critical facilities for more than 1 day and less than 1 week.
Negligible	• Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths. • Negligible quality of life lost. Shut down of critical facilities for less than 24 hours.

Technological Hazards Extent				
Hazard	**Your Estimate**			
	Catastrophic	**Critical**	**Limited**	**Negligible**
Hazardous Materials Release - Land				
Hazardous Materials Release - Marine				
Power Failure				
Structure Fire				
Transportation Accident				

Appendix B: Trinidad Rancheria Risk Survey

Probability of Occurrence

Please check the box (Highly Likely, Likely, Possibly, Unlikely) that corresponds to your estimate for how likely you believe the hazard is for Trinidad Rancheria based on the "Probability" definitions below.

Probability Definitions	
Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability that is greater than 10%.
Likely	Between Occasional occurrences with at least two or more documented historic events. Annual probability that is between 10% and 1%.
Possibly	Possibly: Rare occurrences with at least one documented or anecdotal historic event. Annual probability that is between 1% and .1%.
Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than .1%.

Technological Hazards Probability of Occurrence				
Hazard	**Your Estimate**			
	Highly Likely	**Likely**	**Possibly**	**Unlikely**
Hazardous Materials Release - Land				
Hazardous Materials Release - Marine				
Power Failure				
Structure Fire				
Transportation Accident				

Appendix B: Trinidad Rancheria Risk Survey

Technical Hazards of Most Concern

On a scale of 1 to 5, select how concerned you are about each hazard. 1 - you are not really worried about this hazard; 5 - this is the hazard that concerns you most.

Technological Hazards of Most Concern					
Hazard	**Not Concerned**		**Concerned, but not the worst hazard**		**Very Concerned**
	1	2	3	4	5
Hazardous Materials Release - Land					
Hazardous Materials Release - Marine					
Power Failure					
Structure Fire					
Transportation Accident					

Appendix B: Trinidad Rancheria Risk Survey

Human-caused Threats

This step is the same as for natural and technological hazards, only you will accomplish it for human-caused threats that will cause Trinidad Rancheria to be overwhelmed and need to build capabilities to fully respond to – the "worst most likely." Human-caused threats can be thought of as deliberate attacks such as cyberattacks or mass shootings.

Location

Please check the box (Extensive, Moderate, Limited) that corresponds to your estimate for how much of Trinidad Rancheria is affected by each threat based on the "Location" definitions below.

Location Definitions	
Extensive	Extensive: 50% or more of Trinidad Rancheria land/assets affected
Moderate	Moderate: 25%-50% of Trinidad Rancheria land/assets affected
Limited	Limited: 25% or less of Trinidad Rancheria land/assets affected

Human-caused Threats Location			
Threat	**Your Estimate**		
	Extensive	**Moderate**	**Limited**
Armed Assault			
Biological Attack			
Cyber-attack against infrastructure (ex. power grid)			
Cyber-attack against data			
Sabotage			

Appendix B: Trinidad Rancheria Risk Survey

Extent

Threat Extent – the magnitude of the hazard (Richter Scale, tsunami height, etc.). Please check the box (Catastrophic, Critical, Limited, Negligible) that corresponds to your estimate for how bad you believe the threat is for Trinidad Rancheria based on the "Extent" definitions below.

Extent Definitions	
Catastrophic	• Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). • Injuries or illnesses result in permanent disability and multiple deaths. • Overwhelming damage requires Federal assistance and requires months to years to recover.
Critical	• Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). • Injuries or illnesses result in permanent disability and at least one death. • Shut down of critical facilities for more than 1 week and less than 1 month.
Limited	• Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). • Injuries or illnesses do not result in permanent disability and there are no deaths. • Moderate quality of life lost. • Shut down of critical facilities for more than 1 day and less than 1 week.
Negligible	• Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths. • Negligible quality of life lost. Shut down of critical facilities for less than 24 hours.

Human-caused Threats Extent				
Threat	**Your Estimate**			
	Catastrophic	**Critical**	**Limited**	**Negligible**
Armed Assault				
Biological Attack				
Cyber-attack against infrastructure (ex. power grid)				
Cyber-attack against data				
Sabotage				

Appendix B: Trinidad Rancheria Risk Survey

Probability of Occurrence

Please check the box (Highly Likely, Likely, Possibly, Unlikely) that corresponds to your estimate for how likely you believe the threat is for Trinidad Rancheria based on the "Probability" definitions below.

Probability Definitions	
Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability that is greater than 10%.
Likely	Between Occasional occurrences with at least two or more documented historic events. Annual probability that is between 10% and 1%.
Possibly	Possibly: Rare occurrences with at least one documented or anecdotal historic event. Annual probability that is between 1% and .1%.
Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than .1%.

Human-caused Threats Probability of Occurrence				
Threat	**Your Estimate**			
	Highly Likely	**Likely**	**Occasional**	**Unlikely**
Armed Assault				
Biological Attack				
Cyber-attack against infrastructure (ex. power grid)				
Cyber-attack against data				
Sabotage				

Human-caused Threats of Most Concern

On a scale of 1 to 5, select how concerned you are about each hazard. 1 - you are not really worried about this hazard; 5 - this is the hazard that concerns you most.

Human-caused Threats of Most Concern					
Hazard	**Not Concerned**		**Concerned, but not the worst hazard**		**Very Concerned**
	1	2	3	4	5
Armed Assault					
Biological Attack					
Cyber-attack against infrastructure (ex. power grid)					
Cyber-attack against data					

Sabotage					

Thank You

Your assistance in identifying Trinidad Rancheria's most significant threats and hazards is greatly appreciated.

Appendix C: Interview Worksheets

Appendix C: Interview Worksheets

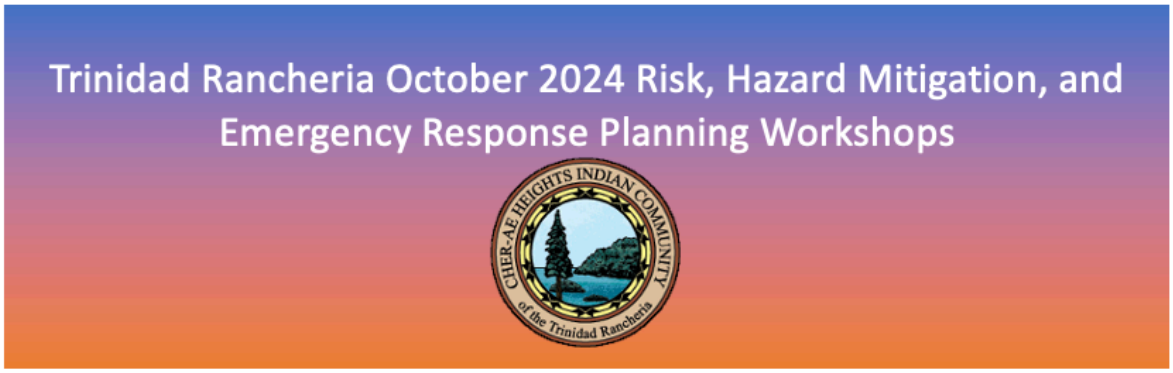
This review of each program/department has two sections. The first part has an overview of each mission essential function (programs/sections). The second section provides details about each program's/section's greatest threat/hazard concerns; what assets they have to respond; what essential items are at risk; and what they need to reduce the risk.

Organization MEF Data Sheet Date:
1. Mission Essential Function Description (Example:" Police Department provides 24/7 law enforcement services with 5 officers" ●
2. Mission Essential Functions (Legal requirements and include deliverables. Example: "EF #1 – Law Enforcement"): ●
3. Impacts if not conducted (Inconvenience vs. safety? Example: "If the Police Department is shutdown, members will not have law enforcement services – endangering their safety."): ●
4. Recovery time objective (how quickly must the mission be restored – 15 minutes, 1 hour, 3 days, etc. Example: "The Police Department must be operational 24/7"): ●
5. Partnerships/Interdependencies (Patients, other departments, external partners, etc., that provide critical input, goods, services, data, etc.): ● Tribal Council ● Other Tribal Departments ● Federal Partners o BIA o State o FEMA
7. Point of Contact:

Appendix C: Interview Worksheets

Checklist Item	Notes
What are your threats and hazards of concern that specifically affect your division? For example, power failure may shut you down or flood might make you evacuate.	●
What size (extent) of a threat or hazard concerns you? For example, is it a 5-foot tsunami, 5.0 earthquake, etc.	●
What specific areas/facilities concern you? What are the impacts that concern you? For example, does your threat or hazard of concern damage your facility, cut it off from access, etc.	●
What emergency response-related capabilities do you have to address threats and hazards? For example, do you have people or equipment that could be used to help evacuate people?	●
What disaster response-related capabilities are put at risk due to threats and hazards? For example, do you have equipment or facilities in a tsunami zone, a slide area, etc.	●
What disaster response-related needs do you have for vulnerability reduction? For example, do you need an elevated generator or data center?	●

Appendix D: Outreach Agendas



Introduction: Conduct risk briefings, hazard mitigation planning, and emergency response planning:

1. Kick of the Hazard Mitigation Plan update
2. Prepare for the 2024 Threat and Hazard Identification and Risk Assessment
3. Emergency Response Plan Reviews

Tuesday, September 10th, 2024:

1. 2:00 P.M – 3:00 P.M. / Back House – Crisis Communications Plan Review
    a. Jacque Hostler-Carmesin, Amy Atkins-Kelley, Bob, Lanham Tyler Felt, Randy Brawley

Wednesday, September 11th, 2024:

1. 10:00 A.M. – 12:00 P.M. / Back House – Risk Assessment and Hazard Mitigation Planning
    a. Leadership and Managers
2. 2:00 P.M. – 4:00 P.M. / Back House – Risk Assessment and Hazard Mitigation Planning
    a. Staff
3. 5:30 P.M – 7:30 P.M. / Back House – Community Council Risk Workshop
    a. Tribal members

Thursday, September 12th, 2024:

1. 09:00 A.M. – 10:00 A.M. / EOC – Roles and responsibilities planning
    a. Tyler Felt, Randy Brawley
2. 10:00 A.M. – 4:00 P.M. / ERP reviews
    a. Audience: EOC, Tribal Administration, Casino, Harbor, Social Services

Friday, September 13th, 2024:

1. 9:00 A.M. – 4:00 P.M. / ERP reviews
    a. Audience: EOC, Tribal Administration, Casino, Harbor, Social Services

Questions: Tyler Felt at tfelt@TrinidadRancheria.com

Appendix D: Outreach Agendas

Introduction: Conduct risk briefings and training to Trinidad Rancheria staff to:

1. Prepare for the 2024 Threat and Hazard Identification and Risk Assessment
2. Integrated Preparedness Plan development
3. Crisis Communications Plan Review
4. Incident Command System (ICS) Training

Tuesday, December 3rd, 2024:

1. 1:00 P.M – 3:00 P.M. / EOC - 2024 THIRA / SPR workshop
2. 3:00 P.M – 5:00 P.M. / EOC - 2024 Hazard Mitigation Plan Review
    a. Audience: Leadership and OES Team members / any other interested staff

Wednesday, December 4th, 2024:

1. TBD / Back House – Crisis Communications Plan review
2. 9:00 A.M. – 4:00 P.M. / EOC – 2024 Integrated Preparedness Plan development
    a. OES Team OES Technician / any other OES staff

Thursday, December 5th, 2024:

1. 08:00 A.M. – 10:00 A.M. / EOC – ICS-100 Review
    a. Audience: Division Directors and OES Team members
2. 10:00 A.M. – 12:00 P.M. / EOC – ICS-700 Review
    a. Audience: Division Directors and OES Team members
3. 1:00 P.M. – 3:00 P.M. / EOC - ICS Tabletop Discussion
    a. Audience: Division Directors and OES Team members

Questions: Tyler Felt; tfelt@TrinidadRancheria.com

Appendix E: Mitigation Action Worksheet / Progress Report

Appendix E: Mitigation Action Worksheet and Progress Report

Jurisdiction:	Trinidad Rancheria
Mitigation Action/Project Title:	
Background/Issue:	
Ideas for Integration:	
Responsible Agency:	
Partners:	
Potential Funding:	
Cost Estimate:	
Benefits: (Losses Avoided)	
Timeline:	
Priority:	
Worksheet Completed by:	

Appendix E: Mitigation Action Worksheet / Progress Report

Mitigation Action Progress Report Form

Progress Report Period	From Date:	To Date:
Action/Project Title		
Responsible Agency		
Contact Name		
Contact Phone/Email		
Project Status	• Project completed • Project canceled • Project on schedule • Anticipated completion date:_____ • Project delayed Explain _____	

Summary of Project Progress for this Report Period

What was accomplished for this project this reporting period?
What obstacles, problems, or delays did the project encounter?
If uncompleted, is the project still relevant? Should the project be changed or revised?
Other comments

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Appendix F: FEMA Tribal Mitigation Plan Review Guide

Tribal Jurisdiction:	Title of Plan:	Date of Plan:
Cher-Ae Heights Indian Community of the Trinidad Rancheria	Multi-Hazard Mitigation Plan Cher-Ae Heights Indian Community of the Trinidad Rancheria	December2024

Tribal Point of Contact:	Address:
Leslie Culver-Sanders	1 Cher –Ae Lane Trinidad, CA 95570
Title: Transportation and Land Use Director	
Agency: Transportation and Land Use	
Phone Number: Office (707) 825-2738 |Cell (707) 601-5754	Email: lsanders@TrinidadRancheria.com

State Reviewer (if applicable):	Title:	Date:

FEMA Reviewer:	Title:	Date:
Date Received in FEMA Region *(insert #)*		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

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Section 1: REGULATION CHECKLIST

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT A. PLANNING PROCESS			
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process? [44 CFR § 201.7(c)(1)]	I, B. "***How the plan was prepared and who was involved"*** PP. 15-19.		
A2. Does the plan document an opportunity for public comment during the drafting stage and prior to plan approval, including a description of how the tribal government defined "public"? [44 CFR § 201.7(c)(1)(i)]	I, C, 1-3. ***"Public Partnership"*** PP. 20-25.		
A3. Does the plan document, as appropriate, an opportunity for neighboring communities, tribal and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? [44 CFR § 201.7(c)(1)(ii)]	I, C, 4. ***"Involving Neighboring Communities, Tribal, and Regional Agencies"*** PP. 26-27.		
A4. Does the plan describe the review and incorporation of existing plans, studies, and reports? [44 CFR § 201.7(c)(1)(iii)]	I, B. "***How the plan was prepared and who was involved"*** PP. 15-18.		
A5. Does the plan include a discussion on how the planning process was integrated to the extent possible with other ongoing tribal planning efforts as well as other FEMA programs and initiatives? [44 CFR § 201.7(c)(1)(iv)]	I, D. "***Integration with other Trinidad Rancheria Planning Efforts"*** PP. 28-29.		
A6. Does the plan include a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within the plan update cycle)? [44 CFR § 201.7(c)(4)(i)]	I, E. "***Method and Schedule for Keeping the Plan Current: How, When and Who Will Evaluate the Plan"*** PP. 30-31.		

A7. Does the plan include a discussion of how the tribal government will continue public participation in the plan maintenance process? [44 CFR § 201.7(c)(4)(iv)]	I, F. ***"Continued Public Participation"*** PP. 32-33.		
ELEMENT A: REQUIRED REVISIONS			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the tribal planning area? [44 CFR § 201.7(c)(2)(i)]	II. B. 1. ***"Hazard Selection"*** PP. 53-72. II, C, 1-11 ***"Natural Hazard Analysis"*** PP. 73-195.		
B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for the tribal planning area? [44 CFR § 201.7(c)(2)(i)]	II. B. 1. ***"Hazard Selection"*** PP. 53-72. II, C, 1-11 ***"Natural Hazard Analysis"*** PP. 73-195.		

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
B3. Does the plan include a description of each identified hazard's impact as well as an overall summary of the vulnerability of the tribal planning area? [44 CFR § 201.7(c)(2)(ii)]	II. B. 1. ***"Hazard Selection"*** PP. 53-72. II, C, 1-11 ***"Natural Hazard Analysis"*** PP. 73-195.		
ELEMENT B: REQUIRED REVISIONS			
ELEMENT C. MITIGATION STRATEGY			

C1. Does the plan include a discussion of the tribal government's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including an evaluation of tribal laws and regulations related to hazard mitigation as well as to development in hazard-prone areas? [44 CFR §§ 201.7(c)(3) and 201.7(c)(3)(iv)]	III, A. ***"Hazard Management Policies, Programs, and Capabilities"*** PP. 230-238.		
C2. Does the plan include a discussion of tribal funding sources for hazard mitigation projects and identify current and potential sources of Federal, tribal, or private funding to implement mitigation activities? [44 CFR §§ 201.7(c)(3)(iv) and 201.7(c)(3)(v)]	III, B. ***"Financial Capabilities"*** PP. 239`-246.		
C3. Does the Mitigation Strategy include goals to reduce or avoid long-term vulnerabilities to the identified hazards? [44 CFR § 201.7(c)(3)(i)]	III, F. ***"Goals and Objectives"*** PP. 250-262.		
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with emphasis on new and existing buildings and infrastructure? [44 CFR § 201.7(c)(3)(ii)]	III, F. ***"Goals and Objectives"*** PP. 250-262.		
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized, implemented, and administered by the tribal government? [44 CFR § 201.7(c)(3)(iii)]	III, G. ***"Action Plan"*** PP. 264-280.		
C6. Does the plan describe a process by which the tribal government will incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate? [44 CFR § 201.7(c)(4)(iii)]	III, H. ***"Incorporation of the Hazard Mitigation Plan into Other Planning Mechanisms"*** PP. 281-289.		
C7. Does the plan describe a system for reviewing progress on achieving goals as well as activities and projects identified in the mitigation strategy, including monitoring implementation of mitigation measures and project closeouts? [44 CFR §§ 201.7(c)(4)(ii) and 201.7(c)(4)(v)]	III, I. ***"Progress Review"*** PP. 290-292.		

1. Standard Regulation Checklist **Regulation** (44 CFR § 201.7 Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT C: REQUIRED REVISIONS			

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ELEMENT D. PLAN UPDATES			
D1. Was the plan revised to reflect changes in development? [44 CFR § 201.7(d)(3)]	IV, A. ***"Changes in Development"*** PP. 293-294.		
D2. Was the plan revised to reflect progress in tribal mitigation efforts? [44 CFR §§ 201.7(d)(3) and 201.7(c)(4)(iii)]	IV, B. ***"Progress in Tribal Mitigation Efforts"*** PP. 295-298.		
D3. Was the plan revised to reflect changes in priorities? [44 CFR § 201.7(d)(3)]	IV, C. **"Plan Revision Reflecting Changing Priorities"** PP. 299-300.		
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. ASSURANCES AND PLAN ADOPTION			
E1. Does the plan include assurances that the tribal government 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? [44 CFR § 201.7(c)(6)]	V, A. ***"Assurance of Federal Guidance Compliance And Required Amendments"*** P. 301.		
E2. Does the plan include documentation that it has been formally adopted by the governing body of the tribal government requesting approval? [44 CFR § 201.7(c)(5)]	***Appendix A.*** P. 302.		
ELEMENT E: REQUIRED REVISIONS			

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2. Enhanced Regulation Checklist **Regulation** (44 CFR § 201.5 Enhanced Tribal Mitigation Plans)	**Location in Plan** **(section and/or page number)**	**Met**	**Not Met**
ENHANCED ELEMENT F. STANDARD PLAN REQUIREMENTS			
F1. Does the enhanced plan include all elements of the standard tribal mitigation plan? [44 CFR §§ 201.3(e)(3), 201.5(b), and 201.7]	N/A		
ENHANCED ELEMENT F: REQUIRED REVISIONS			
ENHANCED ELEMENT G. INTEGRATED PLANNING			
G1. Does the enhanced plan demonstrate integration to the extent practicable with other tribal and/or regional planning initiatives and FEMA mitigation programs and initiatives? [44 CFR §§ 201.3(e)(3) and 201.5(b)(1)]	N/A		
ENHANCED ELEMENT G: REQUIRED REVISIONS			
ENHANCED ELEMENT H. TRIBAL MITIGATION CAPABILITIES			
H1. Does the tribal government demonstrate commitment to a comprehensive mitigation program? [44 CFR §§ 201.3(e)(3) and 201.5(b)(4)]	N/A		
H2. Does the enhanced plan document capability to implement mitigation actions? [44 CFR §§ 201.3(e)(3), 201.5(b)(2)(i), 201.5(b)(2)(ii), and 201.5(b)(2)(iv)]	N/A		
H3. Is the tribal government using existing mitigation programs to achieve mitigation goals? [44 CFR §§ 201.3(e)(3), 201.5(a) and 201.5(b)(3)]	N/A		

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ENHANCED ELEMENT H: REQUIRED REVISIONS

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2. Enhanced Regulation Checklist **Regulation** (44 CFR § 201.5 Enhanced Tribal Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ENHANCED ELEMENT I. HMA GRANTS MANAGEMENT PERFORMANCE			
I1. With regard to HMA, is the tribal government maintaining the capability to meet application timeframes and submitting complete project applications? [44 CFR §§ 201.3(e)(3), 201.5(b)(2)(iii)(A)]	N/A		
I2. With regard to HMA, is the tribal government maintaining the capability to prepare and submit accurate environmental reviews and benefit-cost analyses? [44 CFR §§ 201.3(e)(3) and 201.5(b)(2)(iii)(B)]	N/A		
I3. With regard to HMA, is the tribal government maintaining the capability to submit complete and accurate quarterly progress and financial reports on time? [44 CFR §§ 201.3(e)(3) and 201.5(b)(2)(iii)(C)]	N/A		
I4. With regard to HMA, is the tribal government maintaining the capability to complete HMA projects within established performance periods, including financial reconciliation? [44 CFR §§ 201.3(e)(3) and 201.5(b)(2)(iii)(D)]	N/A		
ENHANCED ELEMENT I: REQUIRED REVISIONS			

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