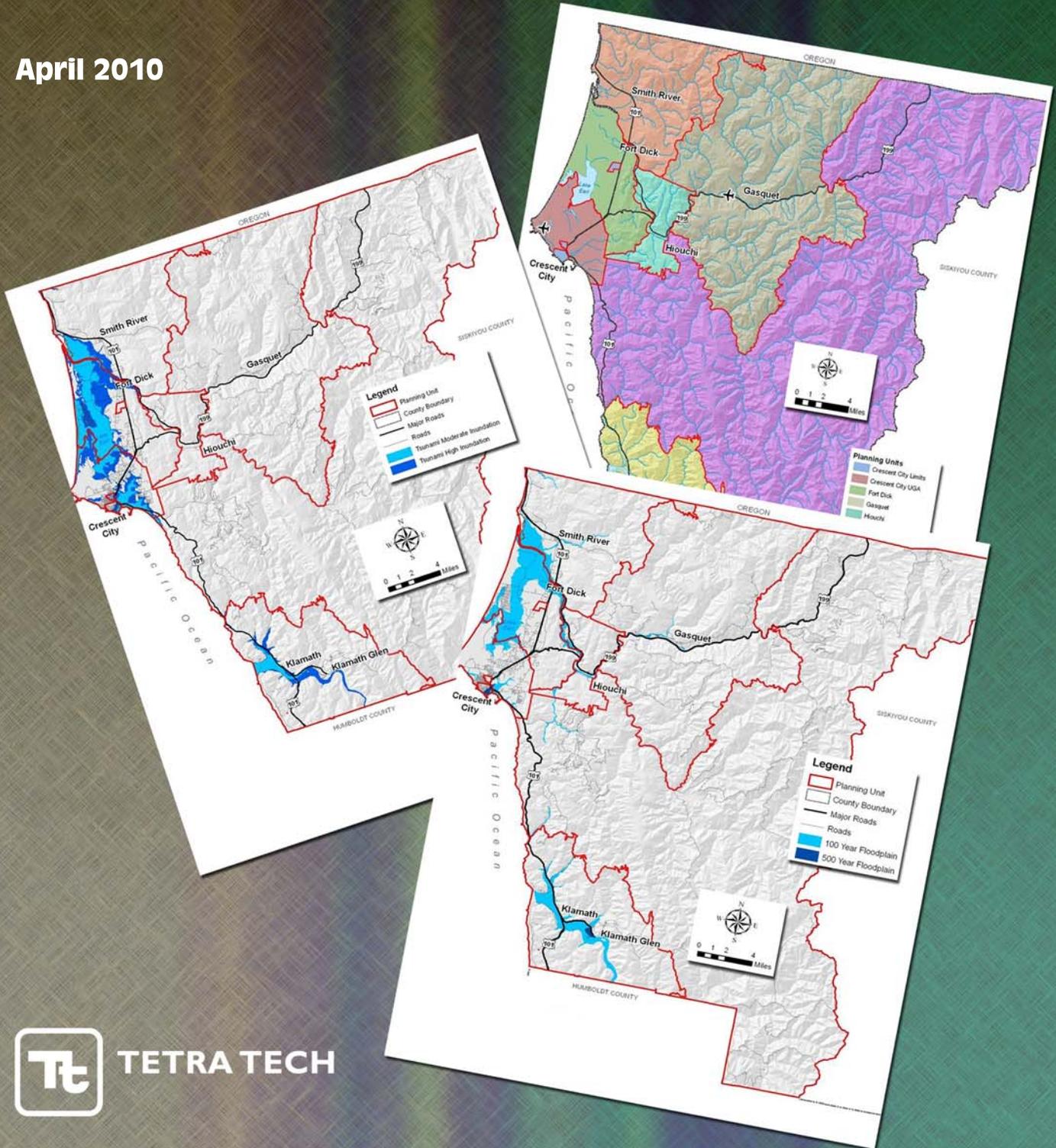




Crescent City/Del Norte County Hazard Mitigation Plan

Volume 2: Planning Partner Annexes

April 2010



TETRA TECH

**Crescent City/Del Norte County
HAZARD MITIGATION PLAN
VOLUME 2: PLANNING PARTNER ANNEXES**

DRAFT

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**Crescent City/Del Norte County
Hazard Mitigation Plan;
Volume 2—Planning Partner Annexes**

TABLE OF CONTENTS

Chapter 1. Planning Partner Participation	1-1
1.1 Background	1-1
1.2 The Planning Partnership	1-1
1.2.1 Initial Solicitation and Letters of Intent.....	1-1
1.2.2 Planning Partner Expectations.....	1-3
1.3 Annex-Preparation Process	1-4
1.3.1 Templates	1-4
1.3.2 Workshop	1-4
1.3.3 Prioritization.....	1-5
1.3.4 Benefit/Cost Review.....	1-5
1.4 Final Coverage Under the Plan.....	1-6
Chapter 2. Unincorporated Del Norte County Annex.....	2-1
2.1 Hazard Mitigation Plan Point of Contact	2-1
2.2 Jurisdiction Profile	2-1
2.3 Jurisdiction-Specific Natural Hazard Event History	2-2
2.4 Natural Hazard Risk/Vulnerability Risk Ranking	2-2
2.5 Capability Assessment.....	2-2
2.6 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives.....	2-2
2.7 Future needs to better understand risk/ vulnerability	2-2
Chapter 3. City of Crescent City Annex	3-1
3.1 Hazard Mitigation Plan Point of Contact	3-1
3.2 City Profile	3-1
3.3 Jurisdiction-Specific Natural Hazard Event History	3-2
3.4 Natural Hazard Risk/Vulnerability Risk Ranking	3-2
3.5 Capability Assessment.....	3-2
3.6 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives.....	3-2
3.7 Future needs to better understand risk/ vulnerability	3-2
3.8 Hazard Maps.....	3-2

Chapter 4. Crescent City Harbor District Annex	4-1
4.1 Hazard Mitigation Plan Point of Contact	4-1
4.2 Jurisdiction Profile	4-1
4.3 Jurisdiction-Specific Natural Hazard Event History	4-3
4.4 Natural Hazard Risk/Vulnerability Risk Ranking	4-3
4.5 Applicable Regulations and Plans	4-3
4.6 District Mitigation-Related Classifications	4-3
4.7 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives.....	4-4
4.8 Future needs to better understand risk/ vulnerability	4-4
Chapter 5. Del Norte County Library District Annex.....	5-1
5.1 Hazard Mitigation Plan Point of Contact	5-1
5.2 District Profile	5-1
5.3 Jurisdiction-Specific Natural Hazard Event History	5-1
5.4 Natural Hazard Risk/Vulnerability Risk Ranking	5-1
5.5 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives.....	5-2
Chapter 6. Big Rock Community Services District Annex	6-1
6.1 Hazard Mitigation Plan Point of Contact	6-1
6.2 District Profile	6-1
6.3 Jurisdiction-Specific Natural Hazard Event History	6-3
6.4 Natural Hazard Risk Ranking.....	6-4
6.5 Applicable Regulations and Plans	6-4
6.6 District Mitigation-Related Classifications	6-4
6.7 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives.....	6-4
6.8 Future Needs to Better Understand Risk/Vulnerability	6-9
Chapter 7. Smith River Community Services District Annex.....	7-1
7.1 Hazard Mitigation Plan Point of Contact	7-1
7.2 District Profile	7-1
7.3 Jurisdiction-Specific Natural Hazard Event History	7-3
7.4 Natural Hazard Risk Ranking.....	7-3
7.5 Applicable Regulations and Plans	7-3
7.6 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives.....	7-3
7.7 Future Needs to Better Understand Risk/Vulnerability	7-3
7.8 Additional Comments.....	7-7

Chapter 8. Smith River Fire Protection District Annex 8-1

8.1 Hazard Mitigation Plan Point of Contact 8-1

8.2 District Profile 8-1

8.3 Jurisdiction-Specific Natural Hazard Event History 8-2

8.4 Natural Hazard Risk Ranking..... 8-3

8.5 Applicable Regulations and Plans 8-3

8.6 Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives..... 8-3

8.7 Future Needs to Better Understand Risk/Vulnerability..... 8-3

8.8 Additional Comments..... 8-7

Appendices

- A. Planning Partner Expectations
- B. Procedures for Linking to the Crescent City/ Del Norte County Hazard Mitigation Plan
- C. Jurisdictional Annex Instructions and Template for Municipalities
- D. Jurisdictional Annex Instructions and Template for Special-Purpose Districts

CHAPTER 1.

PLANNING PARTNER PARTICIPATION

1.1 BACKGROUND

Region IX of the Federal Emergency Management Agency (FEMA) and the California Emergency Management Agency (CalEMA) both encourage multi-jurisdictional planning for hazard mitigation. Such planning efforts require all participating jurisdictions to fully participate in the process and formally adopt the resulting planning document. Chapter 44 of the Code of Federal Regulations (44CFR) states:

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

In the preparation of the Crescent City/Del Norte County Hazard Mitigation Plan, a Planning Partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act of 2000 (DMA) for as many eligible local governments in Del Norte County as possible. The DMA defines a local government as follows:

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

There are two types of Planning Partners in this process, with distinct needs and capabilities:

- Incorporated municipalities (Crescent City and Del Norte County)
- Special purpose districts.

Figure 1-1 shows the special purpose districts within Del Norte County.

1.2 THE PLANNING PARTNERSHIP

1.2.1 Initial Solicitation and Letters of Intent

The planning team solicited the participation of the County and all County-recognized special purpose districts with junior taxing authority at the outset of this project. A kickoff meeting was held in Crescent City in March 2008. All eligible local governments within the planning area were invited to attend. Various agency and citizen stakeholders were also invited to this meeting. The purpose of this session was to:

- Provide an overview of the Disaster Mitigation Act
- Outline the plan development work plan
- Illustrate the benefits of multi-jurisdictional planning
- Solicit planning partners
- Form a Steering Committee.

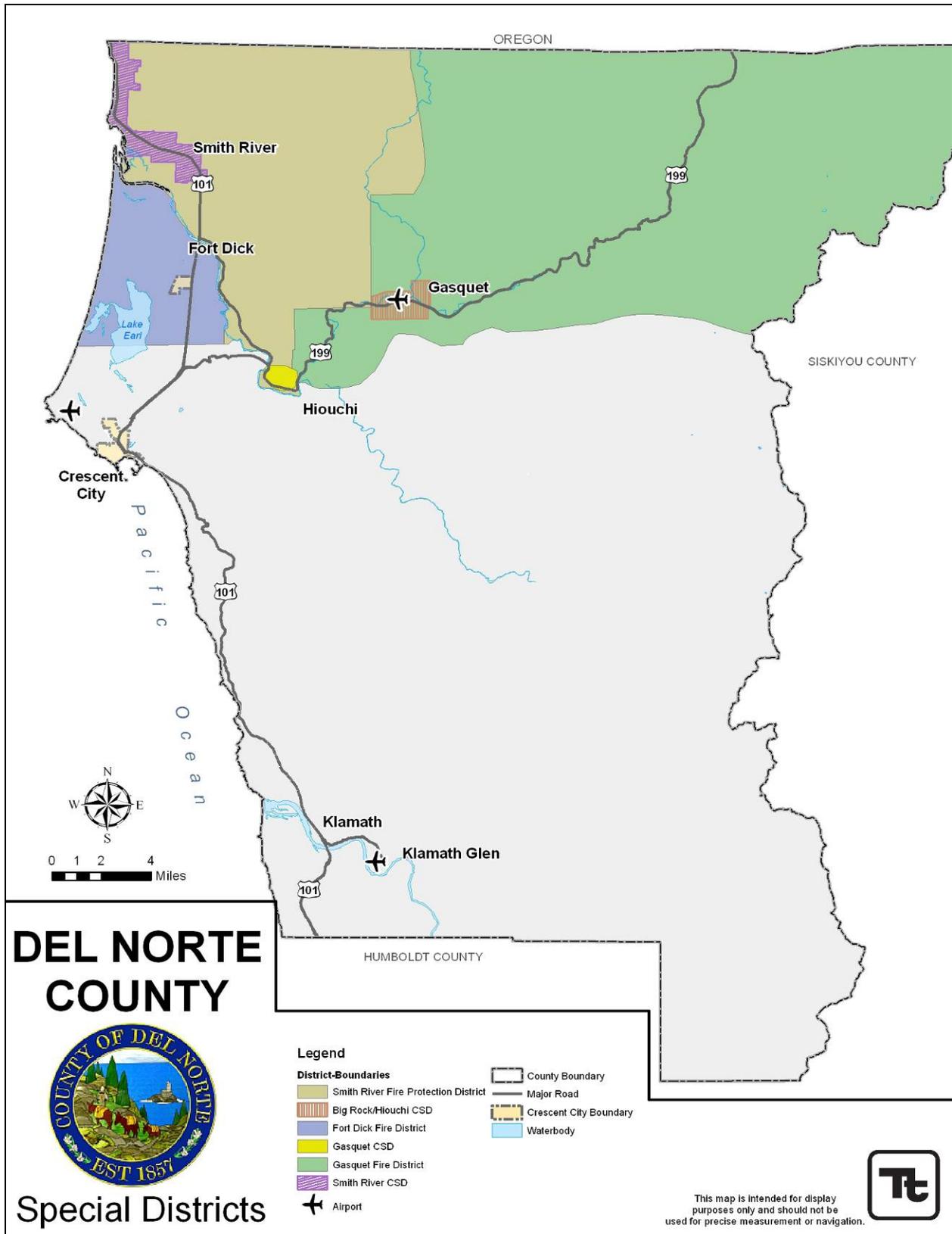


Figure 1-1. Special Districts in Del Norte County

All interested local governments were provided with a list of planning partner expectations developed by the planning team and were informed of the obligations required for participation. Local governments wishing to join the planning effort were asked to provide the planning team with a “notice of intent to participate” that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, formal commitment was received from 14 planning partners by the planning team, and the Del Norte County Planning Partnership was formed.

1.2.2 Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were confirmed at the first Steering Committee held on June 11, 2008:

- Provide a “Letter of Intent to Participate” or resolution to participate to the Planning Team.
- Support and participate in the selection and function of the Steering Committee selected to oversee the development of this plan. Support includes allowing this body to make decisions regarding plan development and scope on behalf of the partnership.
- Provide support in the form of mailing list, possible meeting space, media such as newsletters, newspapers or direct mailed brochures, required to implement the public involvement strategy formed by the Steering Committee.
- Participate in the plan development activities such as: steering Committee meetings; public meetings or open houses; workshops and planning partner specific training sessions; public review and comment periods prior to adoption. At each of these opportunities, attendance will be tracked. These attendance records will be used to track and document participation for each planning partner. No thresholds will be established as minimum levels of participation. However, each planning partner should attempt to attend all possible opportunities.
- Perform a “consistency review” of all technical studies, plans, and ordinances specific to hazards identified within the defined planning area, in order to determine the existence of plans, studies or ordinances not consistent with the same such documents reviewed in the preparation of the County (parent) Plan. For example: if a community has a floodplain management plan that makes recommendations that are not consistent with any of the County’s Basin Plans, that plan will need to be reviewed for probable incorporation into the plan for that community.
- Review the risk assessment and identify hazards and vulnerabilities specific to the local jurisdiction. Contract resources will provide the jurisdiction-specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.
- Review and determine whether the mitigation recommendations chosen in the parent plan will meet the needs of the jurisdiction. Projects within each jurisdiction consistent with the parent plan recommendations will need to be identified and prioritized, and reviewed to determine their benefits vs. costs.
- Create an action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
- Sponsor at least one public meeting to present the draft plan at least 2 weeks prior to adoption.
- Formally adopt the plan.

1.3 ANNEX-PREPARATION PROCESS

1.3.1 Templates

Templates were created to help the Planning Partners prepare their jurisdiction-specific annexes. Since special purpose districts operate differently from incorporated municipalities, separate templates were created for the two types of jurisdictions. The templates were created so that all criteria of Section 201.6 of 44CFR would be met, based on the partners' capabilities and mode of operation. Each partner was asked to participate in a technical assistance workshop during which key elements of the template were completed by a designated point of contact for each partner and a member of the planning team. The templates were set up to lead each partner through a series of steps that would generate the DMA-required elements that are specific for each partner. The templates and their instructions can be found in Appendices C and D to this volume of the Hazard Mitigation Plan.

1.3.2 Workshop

One four-hour workshop was held on March 2, 2009 for Planning Partners to learn about the templates and the overall planning process. The session was separated by type of planning partner to better address each partner's special needs. The purpose of this session was to provide technical assistance and an overview of the template completion process to aid each planning partner in the completion of this vital component of the plan. Attendance at this workshop was mandatory under the planning partner expectations established by the Steering Committee. There was 100-percent attendance of the partnership at these sessions. Topics discussed during this session included:

- DMA
- Crescent City/ Del Norte County plan background
- The templates
- Risk ranking
- Developing your action plan
- Cost/benefit review

In the risk-ranking exercise, each planning partner was asked to rank each risk specifically for its jurisdiction, based on order of impact on its constituency or facilities. Cities were asked to base this ranking on probability of occurrence and the potential impact to people, property and economy. Special purpose districts were asked to base this ranking on probability of occurrence and the impact to their constituency, their vital facilities and their functionality after an event. The methodology for both exercises followed the methodology utilized for the countywide risk ranking in Volume 1. A principal objective of this exercise was to familiarize the partners with the countywide risk assessment as a tool to support other planning and hazard mitigation process that evaluate risk. Tools utilized during these sessions included:

- The countywide risk assessment
- Hazard maps for all seven hazards of concern
- Special district boundary maps that illustrated the sphere of influence for each special purpose district partner.
- Hazard mitigation catalog.

1.3.3 Prioritization

44CFR requires actions identified in the action plan to be prioritized (Section 201.c.3.iii). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44CFR. The actions were prioritized according to the following criteria:

- **High Priority**—Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- **Medium Priority**—Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- **Low Priority**—Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

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

1.3.4 Benefit/Cost Review

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

- Cost ratings:
 - **High**—Existing funding levels are not adequate to cover the costs of the proposed action; implementation would require an increase in revenue through an alternative source (for example, bonds, grants, and fee increases).
 - **Medium**—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
 - **Low**—The action could be funded under the existing budget. The action is part of or can be part of an existing, ongoing program.
- Benefit ratings:
 - **High**—The action will have an immediate impact on the reduction of risk exposure to life and property.
 - **Medium**—The action will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
 - **Low**—Long-term benefits of the action are difficult to quantify in the short term.

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

It should be noted that for many of the strategies identified in this action plan, funding might be sought under FEMA’s HMGP or PDM programs. Both of these programs require detailed benefit/cost analysis as part of the application process. These analyses will be performed on projects at the time of application preparation. The FEMA benefit-cost model will be used to perform this review. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Partners reserve the right to define “benefits” according to parameters that meet their needs and the goals and objectives of this plan.

1.4 FINAL COVERAGE UNDER THE PLAN

Of the 14 planning partners, only seven fully met the participation requirements specified by the Steering Committee. The principal requirement not met by the other partners was the completion of the jurisdictional annex template following a workshop held in March 2009. All 14 partners attended the workshop, but only seven subsequently submitted completed templates. Therefore, only those seven jurisdictions are included in this volume and will seek DMA compliance under this plan. The remaining seven jurisdictions will need to follow the linkage procedures described in Appendix B of this volume. Table 1-1 lists the jurisdictions that submitted letters of intent and their ultimate status in this plan.

Jurisdiction	Letter of Intent Date	Attended Workshop?	Completed Template?	Will Be Covered by This Plan?
Crescent City	4/11/2008	Yes	Yes	Yes
Del Norte County	4/7/2008	Yes	Yes	Yes
Crescent City Harbor District	4/2/2008	Yes	Yes	Yes
Gasquet Fire Protection District	9/10/2008	Yes	No	No
Gasquet Community Services District	9/10/2008	Yes	No	No
Del Norte County Library District	4/2/2008	Yes	Yes	Yes
Smith River Community Services District	4/21/2008	Yes	Yes	Yes
Smith River Fire Protection District	4/21/2008	Yes	Yes	Yes
Big Rock Community Services District	4/25/2008	Yes	Yes	Yes
Fort Dick Fire Protection District	6/23/2008	Yes	No	No
Crescent City Fire Protection District	4/18/2008	Yes	No	No
Del Norte Resource Conservation District	4/25/2008	No	No	No
Klamath Fire Protection District	4/30/2008	Yes	No	No
Del Norte County Office of Education	4/30/2008	Yes	No	No

CHAPTER 2. UNINCORPORATED DEL NORTE COUNTY ANNEX

2.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Cindy Henderson
Emergency Services Manager
981 H Street
Crescent City, CA. 95531
(707) 465-0430
chenderson@co.del-norte.ca.us

Alternate Point of Contact

Jay Sarina
Assistant CAO of Del Norte County
981 H Street
Crescent City, CA. 95531
(707) 464-7204
jsarina@co.del-norte.ca.us

2.2 JURISDICTION PROFILE

Baseline information about the jurisdiction is as follows:

- **Population**—29,022
- **Location**—The County of Del Norte is approximately 350 miles from San Francisco, at the far northwest corner of California, on the Pacific Ocean adjacent to the Oregon border.
- **Date of Incorporation**—1857
- **Brief History**—The area was first explored by the pioneer Jedediah Smith in the early 1800s. He was the first American to reach the area overland on foot in a time before anything was known about such a distant territory. For him it was literally “Land’s End” — where the American continent ended at the Pacific Ocean. In 1855 Congress authorized the building of a lighthouse at “the battery point” (a high tide island on the coast of Crescent City) which is still functioning as a historical landmark. Del Norte County was founded in 1857, from part of the territory of Klamath County following the great California Gold Rush. Klamath County ceased to exist in 1874.
- **Geographical Area**—The county has a total area of 1,230 square miles, of which 222 square miles (18.05 percent) is water. Two national forests—Siskiyou and Six River—are partially within Del Norte County. The Smith River and the Klamath River are located in the county. The county includes five state parks and only one incorporated city, Crescent City. The other communities in the county are Fort Dick, Gasquet, Hiouchi, Klamath and Smith River.
- **Climate**—Temperatures range from 40°F to 60°F year-round along the redwood coastline. Redwoods rely on the fog that envelops the coast in the summer. Summers are mild with warmer temperatures inland. Winters are cool with considerable precipitation. Average high temperature is 54°F in the winter and 65°F in the summer. Average low temperature is 40°F in the winter and 50°F in the summer. Average annual rainfall is 66 inches.
- **Growth Rate/Development Trends**—Del Norte County’s population has grown at a slightly faster pace than California in the last decade. The growth in those 85 and older was nearly twice the state’s rate; however, the growth of those 65 and older was the same. The county has adopted critical-area and resource-land regulations pursuant to the state general planning law and the California Coastal Act. These processes govern land use decision and policy making in the County.

- **Governing Body Format**—Del Norte County is a general law county. The Board of Supervisors, which serves as the legislative and executive body for the county and many special districts, consists of five full-time members elected by district. Pursuant to the California Government Code, the Board enacts legislation governing Del Norte County, determines overall policies for County departments, adopts the annual budget and fixes salaries.

2.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 2-1 lists all past occurrences of natural hazards within the jurisdiction. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 1
- Number of Repetitive Flood Loss Properties that have been mitigated: 0

2.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Table 2-2 presents the ranking of the hazards of concern.

2.5 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 2-3. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 2-4. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 2-5.

The jurisdiction’s classifications under various community mitigation programs are presented in Table 2-6.

2.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 2-7 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 2-8 identifies the priority for each initiative. Table 2-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

2.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time

**TABLE 2-1.
NATURAL HAZARD EVENTS**

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

- a. Hazards & Vulnerability Research Institute (2008). The Spatial Hazard Events and Losses Database for the United States, Version 6.2 [Online Database]. Columbia, SC: University of South Carolina. Available from <http://www.sheldus.org>
- b. Total amount for all counties declared under the event.

**TABLE 2-2.
NATURAL HAZARD RISK RANKING**

Rank	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^a		Probability of Occurrence ^b	Risk Rating Score (Probability x Impact)
		100-year	500-year		
1	Earthquake	\$2,497,918,000		High	54
2	Tsunami	(Low) \$120,971,000	(High) \$824,408,000	High	42
3	Flood	\$394,849,000	\$580,014,000	High	24
4	Severe Weather	?		High	21
5	Wildfire	?		High	21
6	Dam Failure	\$277,106,000		Low	6
7	Landslide	?		Low	6

- a. Building damage ratio estimates based on FEMA HAZUS-MH loss estimate models
- b. High = Hazard event is likely to occur within 25 years; Medium = Hazard event is likely to occur within 100 years; Low = Hazard event is not likely to occur within 100 years

**TABLE 2-3.
LEGAL AND REGULATORY CAPABILITY**

Regulatory Tools (Codes, Ordinances, Plans)	Local Authority (Y or N)	Prohibitions (State or Federal)	Other Jurisdictional Authority (Y or N)	State Mandated	Comments
1) Building Code	Y	Y	N	Y	2007 CA Building Code Ord. 2006-005 § 2, 2008
2) Zoning Ordinance	Y	Y	Y	Y	Ord. 86-01 (part), 2003
3) Subdivision Ordinance	Y	Y	Y	Y	Ord. 86-01 (part), 1986
4) Special Purpose Ordinances (floodplain management, critical or sensitive areas)	Y	Y	Y	N	Flood Ordinance, Ord. 95-15 (part), 1995
5) Growth Management	N	N	N	N	Ord. 229 § 1, 1955
6) Floodplain Management/ Basin Plan	Y	Y	Y	Y	Ord. 95-15 (part), 1995
7) Stormwater Management Plan/ordinance	Y	Y	Y	Y	Ord. 79-19 (part), 1979
8) General Plan or Comprehensive Plan	Y	Y	Y	Y	Ord. 83-03
9) Capital Improvements Plan	Y	N	N	N	Ord. 77-42 § 712, 1977
10) Site Plan Review Requirements	Y	N	N	N	Ord. 95-03 (part), 1995
11) Habitat Conservation Plan	N	N	N	N	Ord. 83-03(part))
12) Economic Development Plan	Y	N	Y	Y	Ord. 92-19 (part), 1992
13) Emergency Response Plan	Y	Y	Y	Y	Ord. 83-03(part))
14) Shoreline Management Plan	N	N	N	N	Ord. 83-03(part))
15) Post Disaster Recovery Plan	Y	Y	Y	Y	Ord. 91-17 § 4, 1991
16) Post Disaster Recovery Ordinance	N	N	N	N	Ord. 91-17 § 4, 1991
17) Real Estate Disclosure req.	Y	Y	Y	Y	Ord. 73-20 § 1, 1973

TABLE 2-4. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available (Y or N)	Department/Agency/Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Community Development Department (CDD), Del Norte County Director, engineer and senior planners 1, 2, 3.
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Community Development Department, County Engineer, Building Inspector
3) Planners or engineers with an understanding of natural hazards	Y	CDD, County Engineer, Building Inspector.
4) Floodplain Manager	Y	CDD, CAO, Asst. CAO, Senior Planner, County Engineer
5) Surveyor(s)	Y	CDD, Contract Surveyor
6) Personnel skilled or trained in “GIS” applications	Y	IT, GIS Coordinator
7) Scientist familiar with natural hazards in Del Norte County.	Y	Contract Scientist
8) Emergency Manager	Y	Del Norte County Administration, Emergency Services Manager
9) Grant Writer(s)	Y	Multiple county departments
10) Staff with expertise or training in benefit/cost analysis	Y	Administration, DNC, Fiscal Manager

TABLE 2-5. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to Levy Taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact Fees for homebuyers or developers of new development/homes	No
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	Don't Know
9) Withhold public expenditures in hazard-prone areas	Yes
10) State sponsored grant programs	Yes
11) Other	FEMA Sponsored Grant Funding

TABLE 2-6. COMMUNITY CLASSIFICATIONS		
Program	Classification	Date Classified
Community Rating System	Not Participating	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	10	N/A
Public Protection		
• Crescent Fire Department	4/8B	NA
• Gasquet Fire District	5/9	N/A
• Klamath Fire District	5/9	N/A
• Smith River Fire District	6/8B	N/A
• Fort Dick Fire District	10	N/A
Storm Ready/Tsunami Ready	Not Participating	N/A
Firewise	Not Participating	N/A

TABLE 2-7. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
DNC 1—Continue/enhance ongoing public education programs to include components on hazards and mitigations						
Existing	All hazards	1, 5, 6	OES	low	EMPG, HSGP, County GF	Short-term and ongoing
DNC 2—Update sponsored website to include preparedness, warning and mitigation information on all hazards						
Existing	All hazards	1, 5, 6	County OES/IT	low	HSGP, EMPG, County GF	Short-term and ongoing
DNC 3—Provide updated narrowband radios and repeaters for all hazard first responders						
New	All hazards	1, 2, 3, 6	County OES	Med.	HSGP, EMPG, County GF	Short-term and ongoing
DNC 4—Engineering and feasibility study of critical facilities for structural and non-structural mitigation						
Existing	All hazards	1, 2, 3, 4,	County Admin./ Bldg. Maint.	Med.	County GF	Short-term and ongoing

TABLE 2-7 (continued). HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
DNC 5—Cost/benefit analysis and feasibility study for the relocation or retro-fitting of the County jail facility						
Existing	Tsunami, earthquake	2, 3, 6	County SO/Jail	high	Possible grant funding	Long-term
DNC 6—Draft and adopt a post disaster action plan						
Both	All	4,5,6	County OES	Low	EMPG, HSPG	Short-term
DNC 7—Develop, map, and communicate an evacuation route for all applicable hazards						
Existing	All hazards	1, 5	County OES	High	Possible grant funding	Long-term
DNC 8—Engineer or retrofit new and existing roads and bridges to withstand hazards						
Both	Flood, tsunami, earthquake	1, 2, 3, 4, 6	County Road Div., CDD	High	Possible grant funding	Long-term
DNC 9—Develop a tsunami warning and response system						
Existing	tsunami	1, 2, 3, 4, 5, 6	County OES	Low	County OES and NOAA Grant	Short-term and ongoing
DNC 10—Develop and implement a tsunami signage program						
Existing	tsunami	1, 2, 3, 5, 6	County OES	Low	County OES and NOAA Grant	Short-term and ongoing
DNC 11—Develop tsunami inundation maps suitable for flood insurance risk use and make available to the public						
Existing	tsunami	1, 2, 5, 6	County CDD and FEMA	High	Possible grant funding	Long-term
DNC 12—Design, post to the web and publicize the availability of a web GIS mapping tool providing detailed maps of natural hazard overlays or site address and/or parcel locations						
New	All hazards	1, 2, 5, 6	County IT, County OES	High	Possible grant funding	Long-term

TABLE 2-7 (continued). HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
DNC 13—Identify and develop adequate locations for the temporary storage of post-disaster event debris.						
Existing	All hazards	3, 4, 6	County CDD, County OES	High	Possible grant funding	Short-term
DNC 14—Secure funding for additional GIS all hazards staffing capacity to provide interagency coordination and consolidated, integrated GIS capabilities including all county departs and other applicable agencies.						
New	All hazards	3, 4, 6	County IT, County OES	High	Possible Grant funding	Long-Term
DNC 15—Retrofit airport runways to be able to receive larger aircrafts						
Existing	All hazards	1, 4, 5, 6	BCRAA	High	Possible grant funding	Long Term
DNC 16—Relocate/digitize County records						
Existing	All hazards	2, 3, 4	All Departments	High	County GF, Possible grant funding	Long-term
DNC 17—Establish alternate OES operation Center						
New	All hazards	3, 6,	County OES	High	Possible grant funding	Long-term
DNC 18—Upgrade/develop redundant interoperable communications systems such as fiber optic wireless, radio and other.						
Both	All Hazards	3, 4, 5, 6	County OES, IT	Med	Possible grant funding	Long-term, short-term
DNC 19—Maintain compliance and good standing within the National Flood Insurance Program (NFIP)						
Both	Flood	1,7,8,10	Com. Dev	Low	Existing program funding	Short-term, on-going
DNC 20— Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.						
Both	All Hazards	All	County OES, Com Dev	Low	County GF, FEMA Grant	Short-Term, Ongoing
DNC 21— Support countywide initiatives identified in Volume 1.						
New & Existing	All Hazards	All	Planning	Low	General fund	Short-Term, Ongoing

**TABLE 2-8.
MITIGATION STRATEGY PRIORITY SCHEDULE**

Initiative	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project be Funded under Existing Programs/ Budgets?	Priority ^a
1	3	Low	Medium	Yes	Yes	Yes	High
2	3	Low	low	Yes	Yes	Yes	Medium
3	4	High	Medium	Yes	Yes	Yes	High
4	4	Medium	High	Yes	Yes	No	Medium
5	3	High	High	Yes	No	No	High
6	3	Medium	Low	Yes	Yes	No	Medium
7	2	High	Medium	Yes	Yes	Yes	High
8	5	Low	Medium	Yes	Yes	No	Medium
9	6	High	Medium	Yes	Yes	Yes	High
10	5	High	Medium	Yes	Yes	Yes	High
11	4	High	Medium	Yes	Yes	No	Medium
12	4	High	Medium	Yes	No	No	Medium
13	3	Medium	High	Yes	No	No	Low
14	3	High	High	Yes	No	No	Low
15	4	High	High	Yes	No	No	High
16	4	Medium	Medium	Yes	No	No	Medium
17	2	High	High	Yes	Yes	No	High
18	4	High	High	Yes	Yes	No	High
19	4	Medium	Low	Yes	No	Yes	High
20	10	High	Low	Yes	Maybe	Yes	High
21	10	High	Low	Yes	No	Yes	High

a. Explanation of priorities

- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

**TABLE 2-9.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard of Concern	Initiative Addressing Hazard, by Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	20, 21	20, 21	1, 2, 6, 7, 12, 20, 21	12, 13, 20, 21	3, 7, 18, 20, 21	4, 8, 15, 17, 20, 21
Earthquake	4, 6, 7, 9, 14, 20, 21	4, 5, 8, 16, 20, 21	1, 2, 6, 7, 12, 20, 21	12, 13, 20, 21	3, 5, 7, 18, 20, 21	4, 8, 15, 17, 20, 21
Flood	4, 6, 7, 9, 14, 19, 20, 21	4, 5, 8, 11, 16, 19, 20, 21	1, 2, 6, 7, 11, 12, 19, 20, 21	12, 13, 19, 20, 21	3, 5, 7, 11, 18, 20, 21	4, 8, 15, 17, 21, 21
Landslide	4, 6, 7, 9, 14, 20, 21	4, 5, 8, 20, 21	1, 2, 6, 7, 12, 21, 21	12, 13, 20, 21	3, 5, 7, 18, 20, 21	4, 8, 15, 17, 20, 21
Severe Weather	4, 6, 7, 9, 14, 20, 21	4, 5, 16, 20, 21	1, 2, 6, 7, 9, 10, 12, 20, 21	12, 13, 20, 21	3, 5, 7, 18, 20, 21	4, 8, 15, 17, 20, 21
Tsunami	4, 6, 7, 9, 14, 19, 20, 21	4, 5, 8, 11, 16, 19, 20, 21	1, 2, 6, 7, 11, 12, 19, 20, 21	12, 13, 19, 20, 21	3, 5, 7, 9, 10, 11, 18, 20, 21	4, 8, 15, 17, 20, 21
Wild Fire	4, 6, 7, 9, 14, 20, 21	4, 5, 20, 21	1, 2, 6, 7, 12, 20, 21	12, 13, 20, 21	3, 7, 18, 20, 21	4, 8, 15, 17, 20, 21

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

CHAPTER 3. CITY OF CRESCENT CITY ANNEX

3.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Eric Taylor, City Planner
377 “J” Street,
Crescent City, CA 95531
Telephone: 707-464-9506
e-mail Address: etaylor@cresecentcity.org

Alternate Point of Contact

Rod Butler, City Manager
377 “J” Street,
Crescent City, CA 95531
Telephone: 707-464-9506
e-mail Address: rbutler@cresecentcity.org.

3.2 CITY PROFILE

Baseline information about the jurisdiction is as follows:

- **Population**—7,680 (as of 1-1-2009)
- **Location**—Crescent City is the only incorporated city in Del Norte County and is California’s northernmost coastal city, 350 miles north of San Francisco and 330 miles south of Portland, Oregon. The city is bordered by the ocean, broad beaches, coastal bluffs, forest and rural county residential development. U.S. Highway 101 bisects the 1.6 square miles of urbanized city land area. Del Norte County has the largest land area
- **Brief History & Development**—The city was founded in 1853 when F.E. Weston set up a small mill to cut wood for the lumber industry. The city was incorporated in 1854. When Del Norte County formed in 1857, Crescent City became the County seat. The logging and fishing industries that historically made up the export-based economy caused boom and bust cycles of employment and population. With the decline of these industries, fluctuations in resident population have dropped. Pelican Bay State Prison was built in 1989, expanding the city limits and adding an inmate (or group quarters) population that effectively doubled the city’s population. The city’s population, including Pelican Bay, makes up roughly 30 percent of Del Norte County residents.

As one of the few larger commercial areas within the predominantly rural northern coastal redwoods, the City generally has a higher proportion of land in commercial and service uses. Hotels and harbor uses serve the tourist and fishing industries. While there is a diverse housing stock, with many high-end beachfront homes, a high number tend to be modest wood frame rental units. The former thriving downtown commercial shopping district never recovered from the 1964 tsunami, in which much of the area was destroyed. Newer commercial development has centered on Highway 101.

- **Climate**—As a coastal town, the City has weather that remains cool throughout the year, with summer temperatures averaging 60-70 degrees Fahrenheit and winter temperatures averaging 40-50 degrees. Annual rainfall averages 75 inches per year, with the occasional severe winter storm bringing winds of up to 90 miles per hour. Due to its geography, and drainage to the ocean, flooding has not brought many problems to the town. Crescent City has experienced tsunami conditions 17 times between 1943 and 1994, the most significant being the 1964 tsunami, which resulted in 12 fatalities.

- **Governing Body Format**—Crescent City has a City Manager/Council form of government with a five-member elected City Council. In 2009, the City employed 65 full-time and 25 part-time workers, more than 43 of whom are employed in public works activities.
- **Growth/Development trends**—Based on the data tracked by the California Department of Finance, Crescent City has experienced a modest rate of growth. The overall population has increased only 5% since 2000, and growth averaged 2.85% per year from 1990 to 2009. With this rate of growth, the anticipated development trends for Crescent City are considered low to moderate. Current projections indicate minimal growth, with elderly and young family households remaining a stable part of the community.

California state law requires that every county and city prepare and adopt a comprehensive long-range plan to serve as a guide for community development. Crescent City adopted its general plan pursuant to this state mandate in 2001, with an update to the housing element in 2003. Future growth and development will be managed as identified in the general plan.

3.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 3-1 lists all past occurrences of natural hazards within the jurisdiction. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 0
- Number of Repetitive Flood Loss Properties that have been mitigated: 0

3.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Table 3-2 presents the ranking of the hazards of concern.

3.5 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 3-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 3-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 3-5. Classifications under various community mitigation programs are presented in Table 3-6.

3.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 3-7 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 3-8 identifies the priority for each initiative. Table 3-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

3.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Tsunami mapping for the coast of California was being updated at the time of the development of this plan. The information had not yet been validated by Del Norte County, Crescent City or CalEMA. It is anticipated that this data will be fully validated by the next update to this plan. Any future update to this plan should consider all best available data and update the risk assessment accordingly.

3.8 HAZARD MAPS

Figures 3-1 through 3-6 show the extent and location of the hazards of concern in Crescent City.

**TABLE 3-1.
NATURAL HAZARD EVENTS**

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

- a. Hazards & Vulnerability Research Institute (2008). The Spatial Hazard Events and Losses Database for the United States, Version 6.2 [Online Database]. Columbia, SC: University of South Carolina. Available from <http://www.sheldus.org>
- b. Total amount for all counties declared under the event.

**TABLE 3-2.
NATURAL HAZARD RISK RANKING**

Rank	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^a		Probability of Occurrence ^b	Risk Rating Score (Probability x Impact)
		100-year	500-year		
1	Earthquake	\$5,239,611	\$56,473,482	High	54
2	Severe Weather	\$63,471,028		High	51
3	Tsunami	\$22,533,000	\$121,941,000 ^c	High	33
4	Flood	\$6,146,000	\$44,049,000	High	27
5	Dam Failure	No Exposure		Low	0 ^d
8	Landslide	No Exposure		High	0 ^d
8	Wild Fire	No Exposure		Low	0 ^d

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
 b. High = Hazard event is likely to occur within 25 years; Medium = Hazard event is likely to occur within 100 years; Low = Hazard event is not likely to occur within 100 years
 c. This value represents the loss estimate for a 300-Year Tsunami event
 d. The probability of occurrence for these events is weighted at “0” due to no exposure

**TABLE 3-3.
LEGAL AND REGULATORY CAPABILITY**

Regulatory Tools (Codes, Ordinances, Plans)	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
1) Building Code	Y	N	N	Y	Unified Building Code, California Building Code adopted 2005, Electrical, mechanical, plumbing 2007 CCR (15.04)
2) Zoning Ordinance	Y	N	N	Y	CCMC Title 17 (zoning)—Ord. 700 § 5 (Exh. A (part)), 2003; Ord. 695 § 2 (part), 2003
3) Subdivision Ordinance	Y	N	N	Y	CCMC Title 16 (subdivisions)—Ord. 587 (part), 1983; prior code § 29-1001
4) Special Purpose Ordinances (floodplain management, critical or sensitive areas)	Y	N	Y	N	Flood Damage prevention Ord: CCMC, Chapter 15.32 (Ord. No. 735, § 1, 8-4-2008)
5) Growth Management	Y	N	N	Y	The City is in compliance with State growth management mandates via 2001 adoption of General Plan.

TABLE 3-3 (continued). LEGAL AND REGULATORY CAPABILITY					
Regulatory Tools (Codes, Ordinances, Plans)	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
6) Floodplain Management/ Basin Plan	N	N	Y	N	
7) Stormwater Management Plan/ordinance	Y	N	N	N	SMC Chapter 12.36, Title 12.- Ord. 697 § 2 (part), 2003: Ord. 695 § 2 (part), 2003
8) General Plan or Comprehensive Plan	Y	N	Y	Y	Adopted 2001, Housing Element 2003
9) Capital Improvements Plan	Y	N	N	N	Six year CIP for roads, water and sewer updated annually.
10) Site Plan Review Requirements	Y	N	N	N	Unified Building Code, California Building Code adopted 2005
11) Habitat Conservation Plan	N	N	Y	N	
12) Economic Development Plan	N	N	N	N	
13) Emergency Response Plan	Y	N	Y	N	Adopted 2003
14) Shoreline Management Plan	N	N	Y	N	Adopted with General Plan Feb. 1999
15) Post Disaster Recovery Plan	N	N	N	N	
16) Post Disaster Recovery Ordinance	N	N	N	N	
17) Real Estate Disclosure req.	Y	N	Y	Y	CA. State Civil Code 1102 requires full disclosure on Natural hazard Exposure of the sale/re-sale of any and all real property.
18) Other	N	N	N	N	

**TABLE 3-4.
ADMINISTRATIVE AND TECHNICAL CAPABILITY**

Staff/Personnel Resources	Available (Y or N)	Department/Agency/Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Planning Department—1 city planner; 1 associate planner. City can also contract for these services.
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Public Works Department—1 Director; 1 Utilities Supervisor; 1 Wastewater Treatment Plant Supervisor; 1 Engineering Technician. City can also contract for these services.
3) Planners or engineers with an understanding of natural hazards	Y	City Planner, Public Works
4) Floodplain Manager	Y	CCMC Chapter 15.32.040 designates the Director of Public Works as the Floodplain Administrator. Public works staff is supported by personnel from the Building Department
5) Surveyor(s)	Y	No licensed Surveyors on City Staff. City can and has contracted for survey work on as needed basis.
6) Personnel skilled or trained in “GIS” applications	Y	The Planning Department includes an Information Technology (IT) division that include 1 senior GIS Analyst
7) Scientist familiar with natural hazards in Del Norte County.	Y	No Scientists on City Staff. City can and has contracted for survey work on as needed basis.
8) Emergency Manager		City Manager, Fire Chief, County OES
9) Grant Writer(s)	Y	Contract, City Planner
10) Staff with expertise or training in benefit/cost analysis	Y	Finance Director

**TABLE 3-5.
FISCAL CAPABILITY**

Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community Development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to Levy Taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	Yes
5) Impact Fees for homebuyers or developers of new development/homes	Yes
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Yes
8) Incur debt through private activity bonds	No
9) Withhold public expenditures in hazard-prone areas	No
10) State sponsored grant programs	Yes
11) Other	None

**TABLE 3-6.
COMMUNITY CLASSIFICATIONS**

Program	Classification	Date Classified
Community Rating System	Not Participating	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	4/4	N/A
Public Protection	4/9	N/A
Storm Ready/Tsunami Ready	Currently Participating	N/A
Firewise	Not Participating	N/A

The above referenced classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation). These classifications are used as an underwriting parameter for determining the costs of various forms of insurance. The Community Rating System class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. Classifications range on a scale of 1 to 10 with Class 1 being the best classification, and Class 10 representing no benefit. Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The Fire Suppression Rating Schedule

**TABLE 3-7.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimate d Cost	Sources of Funding	Time-line
CS-1— Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.						
New & Existing	All Hazards	All	Planning	Low	General fund, possibly FEMA Mitigation Grant Funding for 5-year update	Short-Term, Ongoing
CS-2— Support countywide initiatives identified in Volume 1.						
New & Existing	All Hazards	All	Planning	Low	General fund	Short-Term, Ongoing
CS-3— Survey and inventory lowest floor elevations of all existing structures (both private and public facilities) in VE and X zones, to identify vulnerable structures to target for mitigation.						
Existing	Flooding, severe storms, and Tsunami events in VE zones	O-1, O-2, O-3, O-7, O-8, O-10	Public Works, Contract Surveyor	Low-Medium	General Fund	Short-term

**TABLE 3-7 (continued).
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimate d Cost	Sources of Funding	Time-line
CS-4— Replace, relocate and/or retrofit based on feasibility various critical city infrastructure: City Hall, fire station, water supply, wastewater, clay sewer lines						
Existing	Flooding, severe storms, Tsunami events in VE zones; earthquake	O 1-4, O-6, O-8	Planning Building Public Works	High	CIP; Bond; Mitigation grants; CDBG grants	Long-term (depends on funding)
CS-5— Structural/nonstructural seismic retrofit city fire station						
Existing	Earthquake	O 1-4 O-6, O-9	Crescent City Fire PD	\$1.2 million	FEMA Hazard Mitigation grant funding, general fund for local match	Long-term (depends on funding)
CS-6— Warehouse and/or relocate critical vehicles, equipment and repair materials outside of identified hazard areas						
Existing	All Hazards	O-2, O-6, O-9	Public Works, Police, Fire	Medium	General fund	Short-term
CS-7— Review, improve and update all public awareness materials for disaster evacuation routes and plans; include all social service providers and care facilities in evacuation awareness and planning						
New and Existing	Flood, severe storms, tsunami events in VE and X zones	O-5, O-3	Planning	Low	General Fund	Short-term
CS-8— Develop a post disaster action plan that includes grant funding, debris removal and long-term recovery planning components, addressing both public and private assets						
New and existing	Flood, severe storms, tsunami events in VE and X zones	O-1, O-2, O-4, O-6, O-8, O-10	Planning	Low	General Fund, FEMA General fund, possibly FEMA Mitigation Grant Funding for 5-year update	Long-term (depends on funding)
CS-9— Establish a continuity-of-operations plan with phased return to normal operations						
New and existing	Flood, severe storms, tsunami events in VE and X zones	O-9, O-6	Planning Del Norte Co. Emergency Management	Medium	General Fund	Long-term (depends on funding)

**TABLE 3-7 (continued).
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
CS-10— Identify existing structures not up to adopted IBC through aggressive code enforcement						
New and existing	Flood, severe storms, tsunami events in VE and X zones	O-3, O-4, O-5, O-7, O-8, O-10	Building Department	Medium	General fund	Short-term
CS-11— Continue to maintain compliance and good standing under the National Flood Insurance Program (NFIP).						
New and existing	Flood	O-1, O-7, O-8, O-10	Public Works Building	Low	General Fund	Existing, ongoing
CS-12— Consider participation in the NFIP’s Community Rating System program.						
New and Existing	Flood/Tsunami	O-1, O-7, O-8, O-10	Planning Department	Low	General Fund	Short-term
CS-13— Consider the adoption of higher regulatory standards where appropriate to mitigate the impacts of natural hazards, most notable the flood and tsunami hazards						
New and existing	All Hazards	O-1, O-7, O-8, O-10	Planning Department, City Council	Low	General fund	Short-term
CS-14— Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.						
Existing	Flood, Tsunami, Severe Weather	0-3, 0-4, 0-10	Planning & building Departments	High	FEMA Hazard Mitigation Grant funding with local match provided by property owner contribution	Long-term (depends on funding)

**TABLE 3-8.
MITIGATION STRATEGY PRIORITY SCHEDULE**

Initiative	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project be Funded under Existing Programs/ Budgets?	Priority ^a
CS-1	10	High	Low	Yes	Maybe	Yes	High
CS-2	10	High	Low	Yes	No	Yes	High
CS-3	6	Medium	Low-med	Y	Yes	No	Medium ^b
CS-4	6	High	High	Y	Yes	No	Medium ^b
CS-5	6	High	High	Y	Yes	No	Medium ^b
CS-6	3	High	Medium	Y	No	Yes	High
CS-7	2	High	Low	Y	No	Yes	High
CS-8	6	Low	Medium	N	No	No	Medium
CS-9	2	Medium	Medium	Y	No	No	Medium
CS-10	4	Medium	Low	Y	No	Yes	High
CS-11	4	Medium	Low	Y	No	Yes	High
CS-12	4	Medium	Low	Y	No	Yes	Medium
CS-13	4	Medium	Low	Yes	No	Yes	Medium
CS-14	3	High	High	Yes	Yes	No	Medium

a. Explanation of priorities

- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

b. Implementation depends on funding

**TABLE 3-9.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard of Concern	Initiative Addressing Hazard, by Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Drought	CS-1, CS-2, CS-10, CS-13	CS-1, CS-2, CS-10	CS-1, CS-2, CS-7	CS-1, CS-2, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9	CS-1, CS-2
Earthquake	CS-1, CS-2, CS-10, CS-13	CS-1, CS-2, CS-4, CS-5, CS-10, CS-14	CS-1, CS-2, CS-7	CS-1, CS-2, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9	CS-1, CS-2, CS-4, CS-5
Flood	CS-1, CS-2, CS-3, CS-10, CS-11, CS-12, CS-13	CS-1, CS-2, CS-3 CS-4, CS-10, CS-11, CS-12, CS-14	CS-1, CS-2, CS-3, CS-7, CS-11, CS-12	CS-1, CS-2, CS-11, CS-12, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9, CS-12	CS-1, CS-2, CS-3 CS-4, CS-11, CS-12
Landslide	CS-1, CS-2, CS-10, CS-13	CS-1, CS-2, CS-10	CS-1, CS-2, CS-7	CS-1, CS-2, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9	CS-1, CS-2
Severe Weather	CS-1, CS-2, CS-3, CS-10, CS-13	CS-1, CS-2, CS-3 CS-4, CS-10, CS-14	CS-1, CS-2, CS-3, CS-7	CS-1, CS-2, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9	CS-1, CS-2, CS-3 CS-4
Tsunami	CS-1, CS-2, CS-3, CS-12, CS-13	CS-1, CS-2, CS-3 CS-4, CS-10, CS-12, CS-14	CS-1, CS-2, CS-3, CS-7, CS-12	CS-1, CS-2, CS-12, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9, CS-12	CS-1, CS-2, CS-3 CS-4, CS-12
Wild Fire	CS-1, CS-2, CS-10, CS-13	CS-1, CS-2, CS-10	CS-1, CS-2, CS-7	CS-1, CS-2, CS-13	CS-1, CS-2, CS-6, CS-8, CS-9	CS-1, CS-2

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

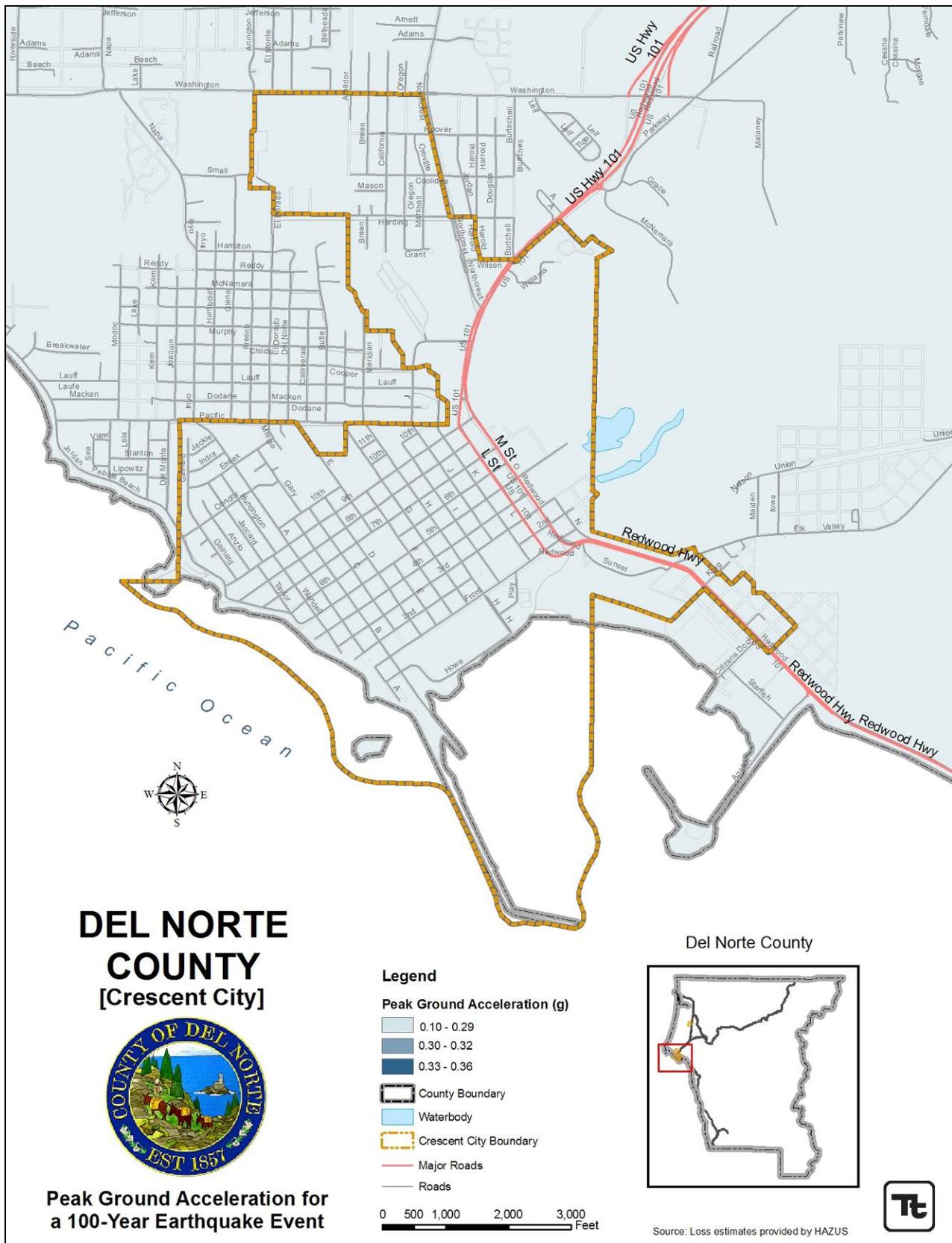


Figure 3-1. Crescent City Earthquake Hazard Areas-100-year probabilistic

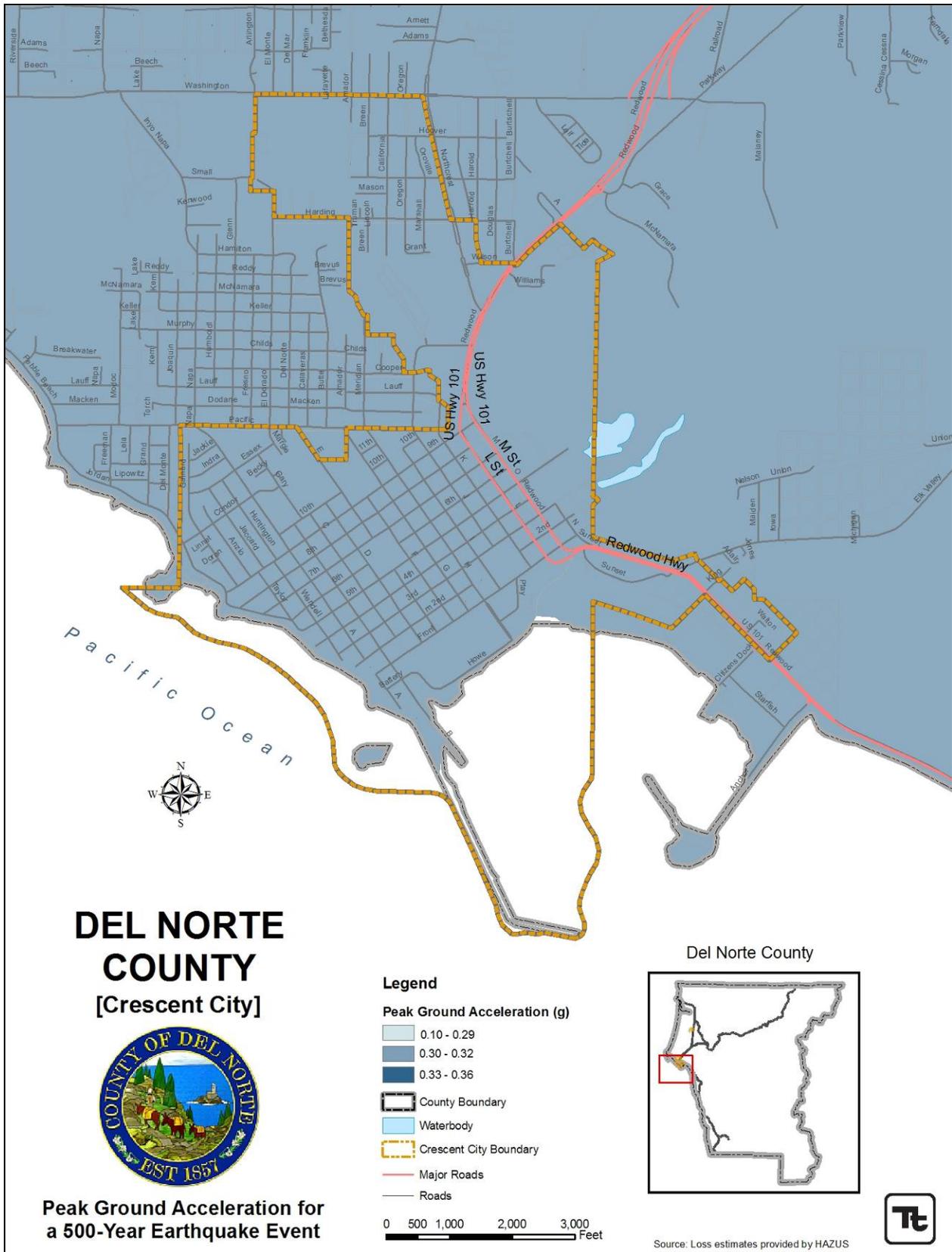


Figure 3-2. Crescent City Earthquake Hazard Areas-500-year probabilistic

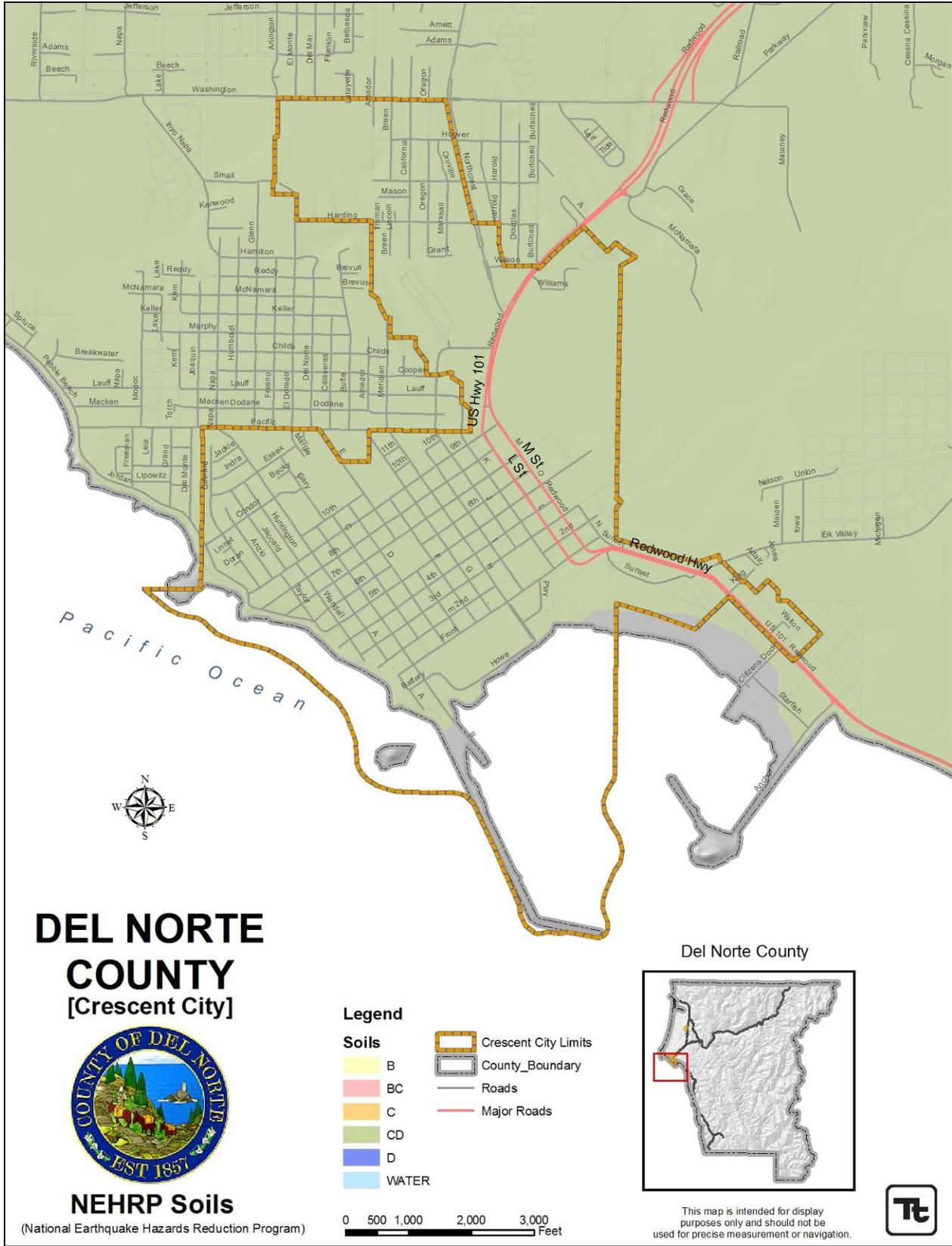


Figure 3-3. Crescent City NEHRP Soil Types

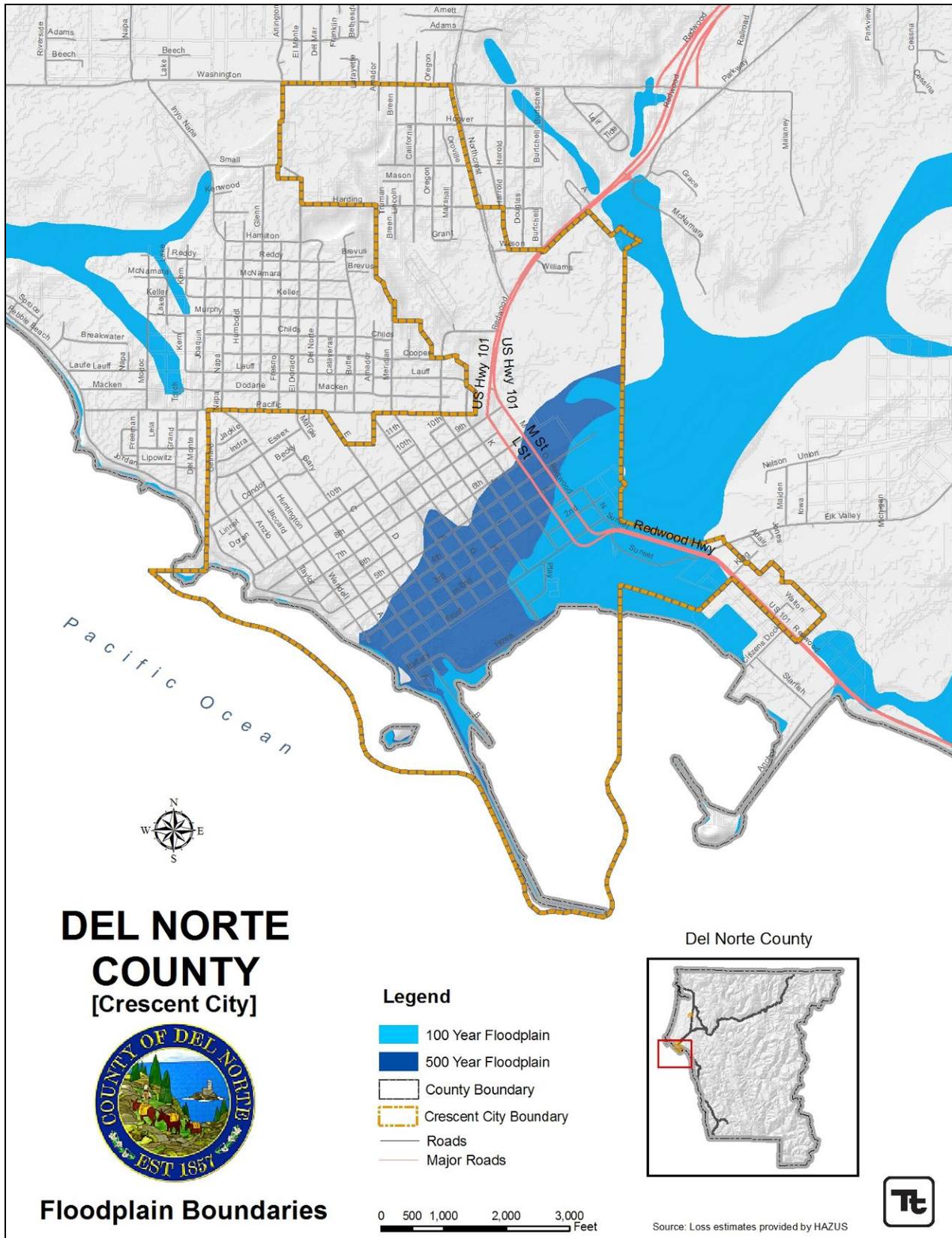


Figure 3-4. Crescent City Flood Hazard Areas

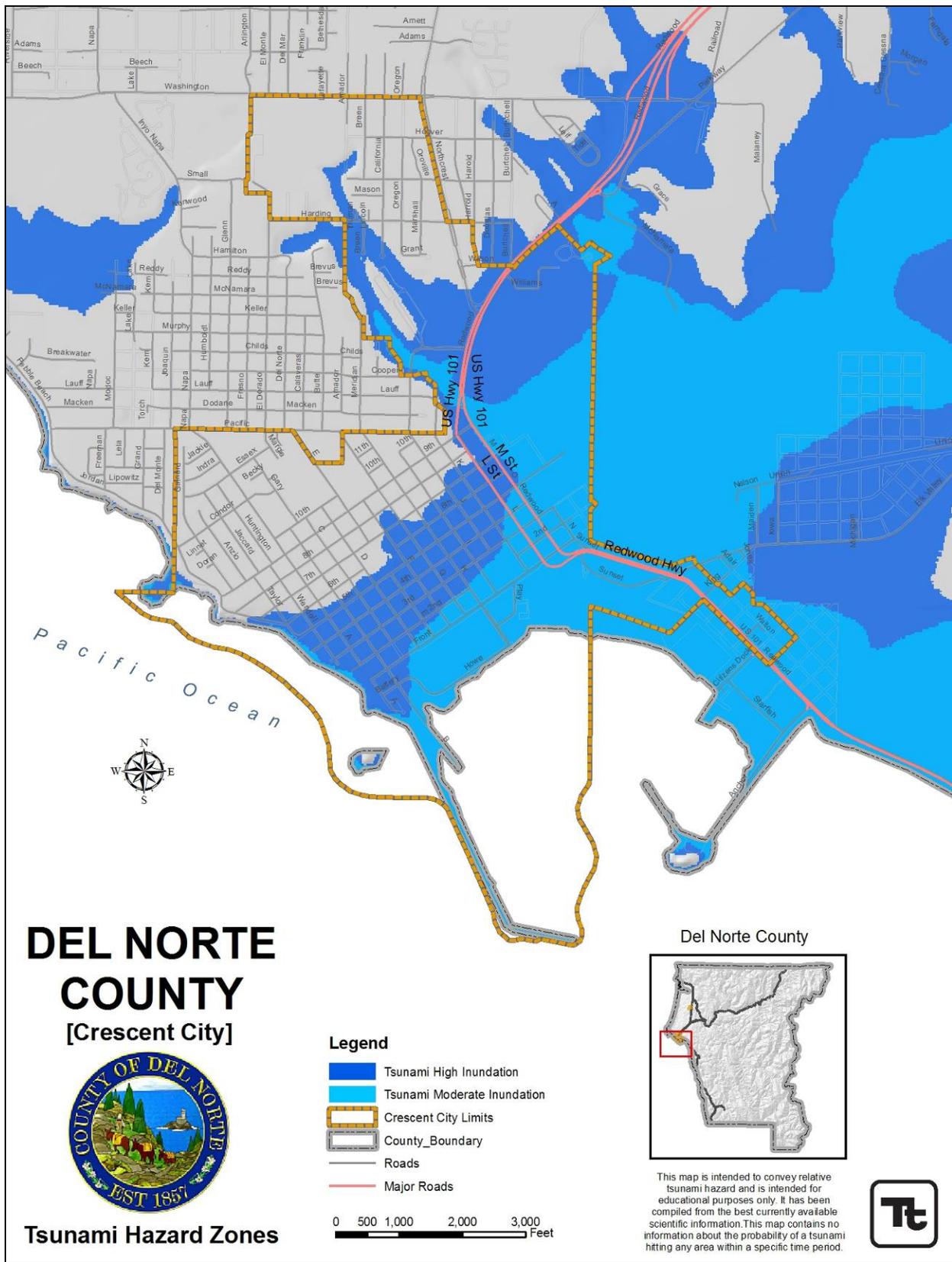


Figure 3-5. Crescent City Tsunami Hazard Areas

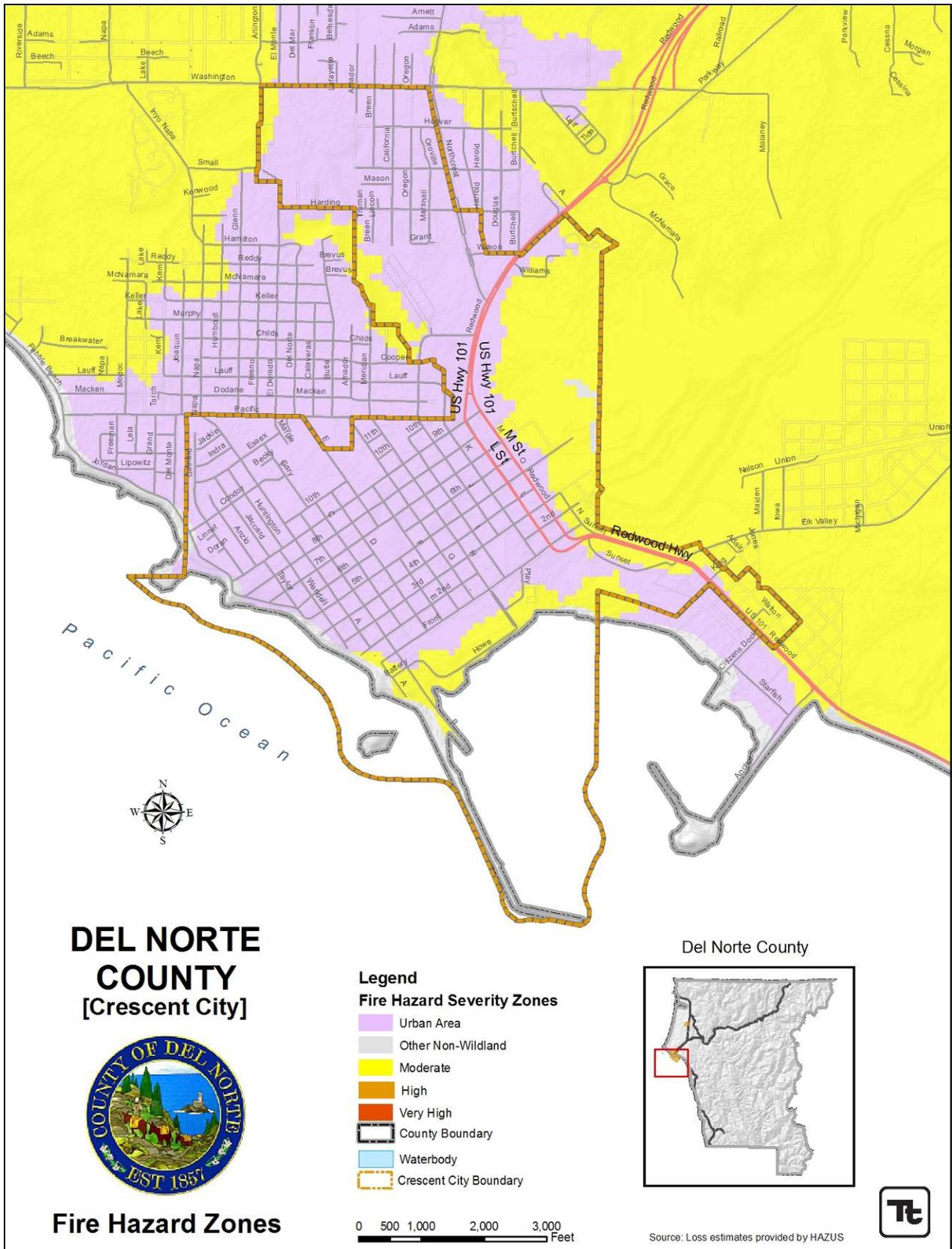


Figure 3-6. Crescent City Fire Hazard Severity Zones

CHAPTER 4. CRESCENT CITY HARBOR DISTRICT ANNEX

4.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Richard Young, CEO/Harbormaster
101 Citizens Dock Rd.
Crescent City, CA 95531
Telephone: (707) 464-6174 (ext 24)
e-mail Address: richard@ccharbor.com

Alternate Point of Contact

Kathy Moore, Bookkeeper
101 Citizens Dock Rd.
Crescent City, CA 95531
Telephone: (707) 464-6174 (ext 23)
e-mail Address: kathy@ccharbor.com

4.2 JURISDICTION PROFILE

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

The CCHD was formed in 1951 to assume responsibility for improvements, maintenance, and management of the Crescent City Marina and related harbor facilities. The CCHD owns and controls land and tideland properties at Crescent Bay, bounded by Crescent City to the west, Crescent Beach to the east, the Highway 101 corridor to the north, and Whaler’s Island and the breakwater to the south. The District owns roughly 150 acres of land. The District is governed by a five-member elected Board of Commissioners. Day-to-day operations are managed by the CEO/Harbormaster and a staff of 12 full and part-time employees.

The Harbor District supports commercial fishing activities, which play a vital role in the Del Norte County economy. The Crescent City Harbor serves as a commercial boat basin for salmon, shrimp, tuna, cod, and Dungeness crab fishing vessels, as well as a basin for recreational watercraft. The Harbor is also home to multiple fishing and non-fishing related businesses and Harbor District offices.

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

- **Population Served**—According to the California State Department of Finance, the estimated population of Del Norte County for 2009 is 29,547.
- **Land Area Served**—The Crescent City Harbor District serves the entire County of Del Norte, which encompasses approximately 1,008 square miles.
- **Value of Area Served**—The area served by the Crescent City Harbor District is the entire County of Del Norte. According to the Del Norte County Assessor’s office, the assessed value of lands within the County for the 2009-2010 tax roll is \$1,666,868,631. The assessed value of the private businesses leasing land and/or structures from the Harbor District is \$3,524,627. The assessed value of private lands within or immediately adjacent to the Harbor District property is \$8,899,936. There is no assessed value of the acreage owned by the

Harbor District, or the structures owned and occupied by the Harbor District, since it is a property-tax-exempt governmental entity.

- **Land Area Owned**—The Harbor area is approximately 150 acres under the ownership/control of the Crescent City Harbor District.
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - Travel-lift
 - Mobile Crane
 - Dump Truck
 - Backhoe
 - 40 Ft. Hull – Texas Steel Dredge
 - 36 Ft. ML1 Landing Craft
 - 20 Ft. McKee Fiberglass Skiff w/motor
 - 16 Ft. Steel Skiff w/motor
 - Pickup Trucks (7)
 - Automobiles (2)
 - Computer Equipment
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is \$417,769.
- **List of Critical Facilities Owned by the Jurisdiction:**
 - Citizen’s Dock
 - Synchrolift and Dock
 - Administrative Dock and Pump-out Station
 - Maintenance/Storage Buildings (5)
 - Seafood Processing Plants (2)
 - Office/Retail Buildings (7)
 - Restroom Buildings (5)
 - Wastewater Treatment Plant (for seafood waste processing)
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is \$6,849,779.
- **Current and Anticipated Service Trends**—Crescent City and Del Norte County are in a state of transition from resource production to a tourism and recreational services-based economy. The CCHD Harbor Master Plan, updated in 2006, emphasizes the District’s intention to retain and improve existing harbor facilities in support of commercial fishing and recreational boating, while expanding coastal related visitor serving uses in the Harbor. These new uses have the potential of generating the revenue necessary to keep the CCHD economically viable, sustaining its ability to meet its mandates under the State Tidelands Grant and the California Coastal Act.

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

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

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

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

- The jurisdiction's boundaries are shown on Figure 1-1 of this volume.

4.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 4-1 lists all past occurrences of natural hazards within the jurisdiction.

4.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Table 4-2 presents the ranking of the hazards of concern.

4.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Endangered Species Act
- U.S. Army Corps of Engineers regulations
- California Environmental Quality Act
- California Coastal Commission
- Del Norte County Code (for that portion of the CCHD located in the unincorporated area of the County)
- Crescent City Municipal Code (for that portion of the CCHD located within the City limits);
- Del Norte Operational Area Emergency Operations Plan (May 2005)

4.6 DISTRICT MITIGATION-RELATED CLASSIFICATIONS

The jurisdiction's classifications under various hazard mitigation programs are presented in Table 4-3.

4.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 4-4 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 4-5 identifies the priority for each initiative. Table 4-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

4.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time.

TABLE 4-1. NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storms	N/A	1/1/2008	\$150,000
Tsunami	N/A	11/15/2006	\$15,000,000 plus
Severe Storms	DR-1628	2/3/2006	\$3,000,000
El Nino Floods	DR-1203	2/9/1998	Estimate not available
Fishing Losses (El Nino Effect)	DR-1038	9/20/1994	Estimate not available

TABLE 4-2. NATURAL HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Tsunami	36
1	Severe Weather	36
2	Earthquake	18
2	Flood	18
3	Wildfire	9
4	Landslide	0
4	Dam Failure	0

TABLE 4-3. COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready	No	N-A	N/A

**TABLE 4-4.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
HD-1— Support countywide initiatives identified in Volume 1.						
New & Existing	All Hazards	All	Board of Commissioners	Low	Operations fund	Short-Term, Ongoing
HD-2— Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.						
New & Existing	All Hazards	All	Board of Commissioners	Low	Operations fund	Short-Term, Ongoing
HD-3— Work with County OES to develop tsunami inundation mapping that will accurately reflect the risk associated with tsunamis and support the Harbor District’s tsunami risk reduction efforts.						
Existing	tsunami	1, 2, 5, 6	Board of Commissioners	High	Possible grant funding	Long-term, depends on funding
HD-4— Post a link to the Hazard Mitigation Plan as well as other pertinent information all phases of emergency management on the District website.						
New and existing	All Hazards	1, 2, 5, 6	Board of Commissioners	Low	Operations fund	Short-term, ongoing
HD-5— Nonstructural seismic retrofit of vulnerable district facilities						
Existing	Earthquake	1, 4, 6, 9	Board of Commissioners	Medium	Operations fund, possible grant funding	Long-term, depends on funding
HD-6— Rebuild inner basin seawall to strengthen and increase height						
Existing	Tsunami	3, 4, 6	Board of Commissioners	High	Operations fund, grant funds	Short-term, Ongoing
HD-7 – Rebuild inner boat basin dock system						
New and existing	Tsunami	3, 4, 6	Board of Commissioners	High	Operations fund, grant funds	Short-term, Ongoing
HD-8 – Develop Tsunami Evacuation Route/Trail for Harbor Area						
New	Tsunami	2, 5, 8, 9	Board of Commissioners, Del Norte County, City of Crescent City	Medium	Grant funds	Short-term

**TABLE 4-5.
MITIGATION STRATEGY PRIORITY SCHEDULE**

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
HD-1	10	High	Low	Yes	No	Yes	High
HD-2	10	Medium	Low	Yes	Yes	Yes	High
HD-3	4	High	High	Yes	Yes	No	Medium
HD-4	4	Low	Low	Yes	No	Yes	High
HD-5	4	High	Medium	Yes	Yes	No	Medium
HD-6	3	High	High	Yes	Yes	Yes	High
HD-7	3	High	High	Yes	Yes	Yes	High
HD-8	4	High	Medium	Yes	Yes	No	Medium

a. Explanation of priorities

- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

**TABLE 4-6.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	No Exposure	No Exposure	No Exposure	No Exposure	No Exposure	No Exposure
Earthquake	1, 2	2, 5	1, 2, 4	2	2	2
Flood	1, 2	2	1, 2, 4	2	2	2, 6, 7
Landslide	No Exposure	No Exposure	No Exposure	No Exposure	No Exposure	No Exposure
Severe Weather	1, 2	2	1, 2, 4	2	2	2, 6, 7
Tsunami	1, 2, 3	2, 3	1, 2, 3, 4	2	2, 3, 8	2, 6, 7
Wild Fire	1, 2	2	1, 2, 4	2	2	2

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

CHAPTER 5. DEL NORTE COUNTY LIBRARY DISTRICT ANNEX

5.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Dennis Sutton
Library Board President
1388 Northcrest Dr.
(707) 464-2163
dsutton16@juno.com

Alternate Point of Contact

Linda Kaufmann
Library Manager
(707) 464-9793
delnortelibrary.kaufmann@charterinternet.com

5.2 DISTRICT PROFILE

Del Norte County Library District is a public library in Crescent City, California with a small branch library in Smith River, California. The library was created in 1906 with a volunteer staff and donated books. The purpose of the Del Norte County Library is to provide resources and opportunities to support lifelong learning, local heritage and the cultural, recreational and informational needs of the community. Currently the library employs one full-time employee and eight part-time employees, with the added support of 25 volunteers. The district is governed by a five-member elected Board of Trustees. The Board will assume responsibility for the adoption and implementation of this plan. Funding is provided through property taxes, timber yield taxes, state and federal funds and some fees, fines and gifts. The library serves all of Del Norte County. Baseline information about the district is as follows:

- **Land Area Served**—1,230 square miles (all of Del Norte County)
- **Population Served**—The population of Del Norte County is approximately 30,000, 65% of which hold library cards; the library also provides some services to non-library members.
- **Land Area Owned**—15,012 sq. ft.
- **List of Critical Infrastructure/Equipment**—Books, computers and computer servers.
- **Value of Critical Infrastructure/Equipment**—\$1,250,000
- **List of Critical Facilities (owned by District)**—Library building located at 190 Price Mall, Crescent City, Calif.
- **Value of Critical Facilities**—\$578, 000
- **Value of Area Served**—\$1,564,759,003
- **Current and Anticipated Service Trends**—The Del Norte County population increased by 5 percent between 2000 and 2006. With this increase came an equal increase in library use. As the economy worsens, we have seen a dramatic increase in computer use and circulation.

5.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 4-1 lists all past occurrences of natural hazards within the jurisdiction.

5.4 NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Table 4-2 presents the ranking of the hazards of concern.

**TABLE 5-1.
NATURAL HAZARD EVENTS**

Type of Event	Date	Estimated Damage Cost
Severe storms/flooding, etc.	02/03/2006	\$7,650,000
Severe storms, flooding	01/04/1997	\$15,150,000
Severe winter storms	12/09/1995	\$8,400,000
Fishing losses (El Nino effect)	09/20/1994	\$30,300,000
Earthquake	04/25/1992	\$17,829,642
Wildland fires/lightning	09/10/1987	\$3,571,428

**TABLE 5-2.
NATURAL HAZARD RISK RANKING**

Rank	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^a		Probability of Occurrence ^b	Risk Rating Score (Probability x Impact)
		100-year	500-year		
1	Earthquake	\$5,239,611	\$56,473,482	High	54
2	Severe Weather	\$63,471,028		High	51
3	Tsunami	\$22,533,000	\$121,941,000 ^c	High	33
4	Flood	\$6,146,000	\$44,049,000	High	27
5	Dam Failure	No Exposure		Low	0 ^d
8	Landslide	No Exposure		High	0 ^d
8	Wild Fire	No Exposure		Low	0 ^d

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. High = Hazard event is likely to occur within 25 years; Medium = Hazard event is likely to occur within 100 years; Low = Hazard event is not likely to occur within 100 years

c. This value represents the loss estimate for a 300-Year Tsunami event

d. The probability of occurrence for these events is weighted at “0” due to no exposure

5.5 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 5-3 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 5-4 identifies the priority for each initiative. Table 5-5 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 5-3. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to New or Existing Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line	
LD-1— Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.							
New & Existing	All Hazards	All	Board of Trustee’s	Low	Operations Fund, FEMA grants for plan update	Short-Term, Ongoing	
LD-2— Support countywide initiatives identified in Volume 1.							
New & Existing	All Hazards	All	Board of Trustee’s	Low	Operations Fund	Short-Term, Ongoing	
LD-3— Nonstructural seismic retrofit of Library facilities							
Existing	Earthquake	1,4,6,9	Crescent City Fire PD	\$1.2 million	Operations Fund, FEMA grants	Long-Term (depends on funding)	

TABLE 5-4. MITIGATION STRATEGY PRIORITY SCHEDULE								
Initiative	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project be Funded under Existing Programs/ Budgets?	Priority ^a	
LD-1	10	High	Low	Yes	Maybe	Yes	High	
LD-2	10	High	Low	Yes	No	Yes	High	
LD-3	6	High	High	Y	Yes	No	Medium ^b	

a. Explanation of priorities

- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

b. Implementation depends on funding

**TABLE 5-5.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard of Concern	Initiative Addressing Hazard, by Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2
Earthquake	LD-1, LD-2	LD-1, LD-2, LD-3	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2
Flood	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2
Landslide	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2
Severe Weather	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2
Tsunami	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2
Wild Fire	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2	LD-1, LD-2

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

CHAPTER 6. BIG ROCK COMMUNITY SERVICES DISTRICT ANNEX

6.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name: Craig S. Bradford
Title: President, Board of Directors/Trustees
Mailing Address: P.O. Box 453, Crescent City,
CA 95531
Telephone #: (707) 458-9933
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Alternate Point of Contact

Name: Pat Kaspari, P.E.
Mailing Address: Winzler & Kelly Engineering,
633 Third Street, Eureka, CA 95501
Telephone: (707) 443-8326
Email Address: patkaspari@w-and-k.com

6.2 DISTRICT PROFILE

Baseline information about the district is as follows:

- **Location**—The Big Rock Community Services District (CSD) is a California special district in the heart of Del Norte County. Its jurisdiction is the Township of Hiouchi, which is on U.S. Highway 199 about 10 miles northeast of Crescent City. The Jedediah Smith Redwoods State Park adjoins on its western flank. A timbered hillside, set apart as a Conservation Easement, adjoins on its north side and is called Hiouchi Mountain. The Kalmiopsis Wilderness Area extends to the north from Hiouchi Mountain. The heavily timbered Smith River National Recreation Area adjoins Hiouchi to the east, and the pristine Smith River defines the Township's southern boundary. U.S. Highway 199, which serves as an evacuation route for the region, bisects Hiouchi. As of April 30, 2009, the CSD serves 130 water connections. Funding comes primarily through rates, two government loans, and taxes.
- **Brief History**—The Big Rock CSD was formed on September 21, 1966 under the California Community Services District Law to provide eight typical municipal services to the inhabitants of Hiouchi. Because insufficient revenue is available to offer the entire array of public services, the CSD chooses only to provide drinking water for its residents and visitors. It therefore must rely upon several public agencies in Del Norte County for support, such as police protection by the Sheriff, centralized garbage disposal, the County of Del Norte for road maintenance and code enforcement, CalTrans for highway maintenance, and fire protection by the Smith River Fire District. The Big Rock CSD is permitted by the California Water Resources Control Board to divert approximately 41 million gallons of water per year from the Smith River. It is important to note for this FEMA-inspired exercise that the CSD is operating uncomfortably close to its annual diversion limit. It owns and maintains two aging Redwood tanks on the hill above the Township that collectively store 150,000 gallons of potable water. The tanks are surrounded by the densely forested Conservation Easement and rest on unstable earthen platforms. The sole water source for this system is the Smith River. The CSD charges its customers relatively moderate water-use fees and also taxes the residents of Hiouchi through the County of Del Norte, but the costs of large capital improvement projects are far beyond the Big Rock CSD's ability to fund.

Almost three years ago, the CSD applied to the State to increase its place-of-use to accommodate (a) population growth and (b) an initiative supported by California State Parks to annex the Jedediah Smith Redwoods State Park into the Big Rock CSD's jurisdiction.

Those actions would allow the Big Rock CSD to furnish potable water to the Park for fire suppression and much-needed drinking purposes.

- **Climate**—Hiouchi’s weather is warm and relatively dry in summer, with cool, wet winters. The Township is above the coastal fog line. Annual average rainfall is about 60 inches, with 87 percent of that falling from December through April. The average year-round temperature is 68 degrees. Humidity averages between 28 and 73 percent. Prevailing winds are down-canyon from the northeast, averaging 9 mph. Dangerous clear-air-mass cyclones appear on occasion, which arise from opposing wind patterns that are compressed by the surrounding mountains in the same manner as a Venturi tube.
- **Growth and Development Trends**—The CSD’s historical records indicate a population growth rate of 50.61 percent since 1966, almost all of which was residential. Hiouchi is a resort community that has been featured in travel magazines and popular movies. It enjoys a tourism and recreation economy that is strongly influenced by vehicular travel on U.S. Highway 199, prime seasonal steelhead and salmon fishing, and guests of the adjacent Jedediah Smith Redwoods State Park. Unless the remaining nine vacant parcels are subdivided, which is not likely, there is little room for future growth due to steep mountainous terrain and the Smith River that collectively surround the Township. The existing residences range from custom single-family dwellings to a mobile home park. An RV park is Hiouchi’s centerpiece for tourists.

The entirety of Del Norte County constitutes a distressed economy, because of its seasonal nature, dependency on the fading commercial fishing and logging industries, and challenging access limited by three long, narrow, winding highways.

- **Governing Body Format**—Per California Government Code, the Big Rock CSD is governed by five directors/trustees comprising a Board of Directors/Trustees who are elected in County elections for four-year terms. The organization employs a part-time general manager and a part-time secretary/bookkeeper. In addition, the CSD uses (a) an independent auditing firm on contract (Smith & Newell CPAs), (b) Winzler and Kelly Engineering on contract, (c) an Edward Jones Investments broker on commission, and (d) an attorney on retainer. The CSD conducts its business with five committees, all of which report directly to the Board of Directors/Trustees. The Board holds an internal election every year to choose a President of the Board, a Vice President of the Board, and a Treasurer. All must be members of the Board. Each director/trustee receives a stipend of \$40 per meeting attended and no benefits. The general manager and secretary/treasurer are compensated on a salaried basis. The auditor’s “Management Report for the Year Ended June 30, 2008” reflects no material findings.
- **Land Area Served**—Existing is 0.654 square miles (418.67 acres). Upon annexation of the Jedediah Smith Redwoods State Park, it will be 2.154 square miles (1,378.56 acres).
- **Population Served**—651 residents.
- **Land Area Owned**—0.16 acre owned, 2 acres in easements.
- **List of Critical Infrastructure/Equipment**—The Big Rock CSD’s critical equipment inventory consists of:
 - Backup booster pump (1)
 - 4 submersible river pumps and 2 associated electricity management systems
 - 130 water meters and concrete service boxes
 - 3 master meters and 1 concrete vault
 - Rolling stock (1 vehicle)

- 3 fully equipped computer stations, two copiers, and two shredders
- SCADA water management system (under installation)
- 2 emergency generators (delivery imminent)
- **Value of Critical Infrastructure/Equipment**—Total replacement cost of said infrastructure/equipment is \$300,407.
- **List of Critical Facilities (owned by District)**—Critical facilities are:
 - 2 Redwood water storage tanks with a total capacity of 150,000 gallons
 - Water treatment facility
 - 4.2 miles of water main (8, 6, and 4-inch lines)
 - Transmission and distribution pipelines (6.9 miles of 2-inch lines)
 - River well (1), 3 collection galleries, and a heavy overhead lift
 - Office equipment and parts inventory
 - Main and hillside pump houses
 - Security fencing (200 feet)
- **Value of Critical Facilities**—Total replacement cost of buildings/facilities is \$6,849,550.
- **Value of Area Served**—The Del Norte County Assessor refused to provide this information without charging a fee of \$40 per hour. We estimate the value as \$37,616,101.
- **Current and Anticipated Service Trends**—Hiouchi has experienced 0.61-percent growth over the past five years. Land-use regulations project little or no increase in residential land uses within the Big Rock CSD’s jurisdiction. The CSD can expand its service area only by annexing the Jedediah Smith Redwoods State Park, which is underway.

The district’s boundaries are shown in Figure 1-1 of this volume of the hazard mitigation plan.

6.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In descending order and frequency of occurrence, Hiouchi’s hazard vulnerabilities are wildfire, severe weather, earthquake, landslide, flood, hazardous materials, erosion, and household fire, which do not correspond precisely to the hazards agreed upon by the County’s Disaster Mitigation Planning Committee. These are the disasters most likely to occur in Hiouchi; the order does not indicate the highest damage potential. A principal concern of the CSD is that if one of the water pumps fails in a high-demand scenario, such as trying to satisfy fire suppression demands in a wildfire, the loss of water pressure from one of the storage tanks running dry could cause cross-contamination of the entire distribution system. A contaminated system would have to be shut down for possibly days, and residual contaminants in the system would pose a significant public-health threat throughout Hiouchi. If a large fire causes a drawdown of Hiouchi’s 150,000-gallon water reserve that cannot be sustained by the river pumps, the CSD would have to prioritize the public health of its customers and terminate water distribution to fire protection agencies. The consequences surely would be disastrous. Large fires in this area historically cause Hiouchi, Douglas Park, Big Flat, and Gasquet to be isolated by U.S. Forest Service blockades along U.S. Highway 199. The westernmost location of choice for traffic control typically has been Hiouchi.

Rock fall along U.S. Highway 199, especially on the northeast end of Hiouchi, is a constant problem during foul weather. CalTrans rock-removal crews are challenged as often as once per week when granite chunks roll down the mountainside, often causing significant damage to vehicles and road surfaces.

Because U.S. Highway 199 is the only escape route from the coastal zone, it must remain open at all costs. We strongly recommend that Tetra Tech research CalTrans records for the associated risk and cost factors from Hiouchi northeast to the tunnel. The Big Rock CSD is not privy to such information.

Table 6-1 lists all past occurrences of natural hazards within the jurisdiction.

6.4 NATURAL HAZARD RISK RANKING

Table 6-2 presents the ranking of the hazards of concern.

6.5 APPLICABLE REGULATIONS AND PLANS

Existing plans and documents that are applicable to this hazard mitigation plan are the same as identified in the Del Norte County annex. The following existing codes, ordinances or policies are applicable to this hazard mitigation plan:

- California Department of Public Health
- California and U.S. Environmental Protection Agencies
- U.S. Department of Homeland Security
- Army Corps of Engineers
- California Environmental Quality Act
- Federal Endangered Species Act
- Cal Fire
- California Highway Patrol
- Del Norte County Sheriff's Department
- California Water Resources Control Board
- U.S. Forest Service
- California State Parks
- Big Rock CSD Ordinances 2000-1, 2008-1, 2009-1, and Ordinance on Backflow Prevention Devices 3/1/94
- California Government Code
- CalTrans.

6.6 DISTRICT MITIGATION-RELATED CLASSIFICATIONS

The district's classifications under various community mitigation programs are presented in Table 6-3.

6.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 6-4 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 6-5 identifies the priority for each initiative. Table 6-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

**TABLE 6-1.
NATURAL HAZARD EVENTS**

Type of Event	Date	Estimated Damage Cost
Flood	December 2008	\$1,400 in labor and administrative costs to issue and cancel boil orders to every home in Hiouchi when the Smith River rose 12 feet over the top of the CSD's wellhead. No electrical service for two days, causing the Emergency Operations Center to resort to communicating with each residence on foot.
Wildfires	Summer 2008	\$92,000 to pumps and valves providing water for the Signal Hill and Blue Two Fires. Lost revenue from 180,000 gallons used to fill fire suppression tankers. Dangerous public health events in traffic blockades. Insurance companies subsequently cancelled local homeowners' policies, because the California DOI reclassified the region as a higher fire hazard risk. Hiouchi is situated in the middle of several highly forested areas, and is thereby stuck with being a front-line emergency refuge.
Diesel spill from overturned tanker	February 2008	Expensive CalTrans cleanup one mile upriver from Hiouchi (unknown costs). Big Rock CSD turned off its river pumps for 36 hours. No contamination in the drinking water due to quick reaction by the General Manager.
Violent cyclonic winds (clear air mass turbulence)	Spring 2008	\$12,650 to a barn roof when a large fir tree was sucked out of the ground and deposited on it.
Wildfire	Summer 2002	\$60,000 in ash damage to gardens, cars and windows from the Myrtle Creek Fire.
Earthquake (mild)	Fall 1998	Concrete foundation cracks in several homes
Earthquake (moderate)	December 1985	Major flash flood from landslide in the South Fork (Smith River) canyon 7 miles above Hiouchi.

**TABLE 6-2.
NATURAL HAZARD RISK RANKING**

Rank	Hazard type	Estimate of Potential Dollar Losses to District-Owned Facilities Exposed to the Hazard	Probability of Occurrence ^a
1	Wildfire	\$691,400	High
2	Severe Weather	\$96,000	High
3	Earthquake	\$4,541,550	High
4	Landslide	\$807,650	High
5	Flood	\$29,600	High
6	Hazardous Materials	\$600,000	High
7	Erosion	\$194,110	High
8	Household Fire	\$757,500	High
9	Drought	\$652,400	Medium
10	Dam Failure	None	None
11	Tsunami	Unknown water demand. The exodus from the coastal zone will impact the Hiouchi RV Park, community park, grocery store (Hiouchi Hamlet), and Hiouchi Café. The grocery store has been looted twice recently by individuals escaping a tsunami alert.	High

a. High = Hazard event is likely to occur within 25 years; Medium = Hazard event is likely to occur within 100 years; Low = Hazard event is not likely to occur within 100 years

**TABLE 6-3.
DISTRICT CLASSIFICATIONS**

Program	Classification	Date Classified
Public Protection	N/A	N/A
Firewise	Not Participating	N/A
Storm Ready	Not Participating	N/A
Tsunami Ready	Not Participating	N/A

<p align="center">TABLE 6-4. HAZARD MITIGATION ACTION PLAN MATRIX</p>						
Applies to New or Existing Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
BRCSD 1—Replace 15 wet-barrel fire hydrants with dry-barrel hydrants.						
Existing	1, 3, 4, 7, 8, 9	Prevent catastrophic water loss	Big Rock CSD	\$150,000	HMGP	Short Term
BRCSD 2—Replace both Redwood water storage tanks with steel tanks and increase the total capacity by 115,000 gallons.						
Existing	1, 3, 4, 7, 8, 9	Prevent the loss of tanks and accommodate pending Park annexation.	Big Rock CSD	\$600,000	HMGP	Short Term
BRCSD 3—Excavate 100 feet of mountain in two locations to place new steel tanks on granite foundations.						
New	1, 2, 3, 4, 7, 8, 9	Prevent the loss of existing tanks and destruction of housing below.	Big Rock CSD	\$2.95 million	PDM	Short Term
BRCSD 4—Replace all aged water mains.						
Existing	3, 4, 7	Avoid catastrophic water loss.	Big Rock CSD	\$2.5 million	Grant	Short Term
BRCSD 5—Improve road access to the District’s assets and emplace flood and erosion barriers.						
Existing	1, 2, 3, 4, 5, 7,	Prevent existing road and trail thoroughfares from hindering rapid responses during disasters.	Big Rock CSD	\$205,000	HMGP	Short Term
BRCSD 6—Purchase 0.5 acre of land and construct a secure facility to house an emergency operations center, emergency response equipment and vehicle, and a large emergency generator.						
New	1, 2, 3, 4, 5, 6, 8, 11	Improve disaster management, preserve critical equipment, and comply with DHL regulations.	Big Rock CSD	\$295,000	PDM	Short Term
BRCSD 7—Purchase two satellite telephones with a 5-year service contract.						
New	1, 2, 3, 4, 5, 6, 8, 9, 11	Enable communication with points outside of Hiouchi in a disaster.	Big Rock CSD	\$9,000	District Funds	Short Term
BRCSD 8—Purchase a 45 KW emergency generator to power both river pumps and a 15 KW generator to operate a smaller pump between the two water storage tanks.						
New	1, 2, 3, 4, 5, 8	Enable communication with points outside of Hiouchi in a disaster.	Big Rock CSD	\$25,407	Grant or District Funds	Short Term

TABLE 6-4 (continued). HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to New or Existing Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line	
BRCSD 9—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.							
New & Existing	All Hazards	All	Big Rock CSD	Low	District Funds, FEMA grants for plan update	Short- Term, Ongoing	
BRCSD 10—Support countywide initiatives identified in Volume 1.							
New & Existing	All Hazards	All	Big Rock CSD	Low	District fund	Short- Term, Ongoing	

TABLE 6-5. MITIGATION STRATEGY PRIORITY SCHEDULE							
Initiative	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project be Funded under Existing Programs/ Budgets?	Priority ^a
1	6	Medium	High	Yes	Yes	No	High
2	6	High	High	Yes	Yes	No	High
3	7	High	High	Yes	Yes	No	High
4	3	Medium	High	Yes	Yes	No	High
5	6	High	High	Yes	Yes	No	High
6	8	High	High	Yes	Yes	No	High
7	9	High	Low	Yes	No	Yes	High
8	6	High	Medium	Yes	Yes	Yes	High
9	10	High	Low	Yes	Maybe	Yes	High
10	10	High	Low	Yes	No	Yes	High

a. Explanation of priorities

- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

**TABLE 6-6.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard of Concern	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	No Exposure	No Exposure	No Exposure	No Exposure	No Exposure	No Exposure
Earthquake	9, 10	1, 2, 3, 4, 8, 9, 10	9, 10	9, 10	5, 6, 8, 9, 10	9, 10
Flood	9, 10	4, 8, 9, 10	9, 10	9, 10	5, 6, 7, 8, 9, 10	9, 10
Landslide	9, 10	3, 4, 8, 9, 10	9, 10	9, 10	5, 6, 7, 8, 9, 10	9, 10
Severe Weather	9, 10	4, 8, 9, 10	9, 10	9, 10	5, 6, 7, 8, 9, 10	9, 10
Tsunami	9, 10	4, 8, 9, 10	9, 10	9, 10	5, 6, 7, 8, 9, 10	9, 10
Wild Fire	9, 10	1, 2, 3, 4, 8, 9, 10	9, 10	9, 10	5, 6, 7, 8, 9, 10	9, 10

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

6.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The CSD has considered risks in the context of Hiouchi’s vulnerabilities, and hopes to acquire the necessary funding to push the Township into the 21st century. Most small special districts struggle to keep up with regulatory evolutions, but, at the same time, they cannot obtain the level of revenue that is critical to staying in the race with urban municipalities that routinely receive federal and state funds. New requirements imposed by the U.S. Department of Homeland Security (DHS), the EPA’s bio-terrorism assessment requirements, and the “Groundwater Rule” add even more to our “must do” plate. Unfunded mandates seem to be the rule of the day, forcing leaner townships such as Hiouchi into increased debt postures or, worse yet, into regulatory noncompliance.

In January, the Big Rock CSD attended a DHS presentation in Crescent City that addressed the array of new threats facing elected officials and their jurisdictions and helped us think about our vulnerabilities. We urgently need help in funding the initiatives that now must be put into motion as we try to protect ourselves from the vagaries of an increasingly unfriendly world. Perhaps someone from FEMA, DHS, or the EPA can visit our town to explain to our constituents how we might get from “A” to “B” without raising their drinking water rates or further taxing them. Please tender that thought as a “future need.”

CHAPTER 7. SMITH RIVER COMMUNITY SERVICES DISTRICT ANNEX

7.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name: Myron Williamson
Title: General Manager
Mailing address: 241 1st Street
Smith River, CA 95567
Telephone #: (707) 487-5381
E-mail Address: srwater@charterinternet.com

Alternate Point of Contact

Name: Ernie Silva
Title: Board Member
Telephone: (707) 487-2682
Email Address: srwater@charterinternet.com

7.2 DISTRICT PROFILE

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

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

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

- **Land Area Served**—The SRCSD service area roughly corresponds to the Smith River Planning Area as identified in the hazard mitigation planning process.
- **Population Served**—The identified population of the SRCSD service area is 2,015.
- **Land Area Owned**—The SRCSD owns 6.89 acres within its boundaries, valued at \$243,550.
- **List of Critical Infrastructure/Equipment and Value:**
 - Three 25 horsepower pumps \$12,000
 - One 20 horsepower pump. \$4,000
 - 0.5 miles of 10-inch A/C pipe \$106,000
 - 7.2 miles of 8-inch A/C pipe \$1,330,140

- | | |
|--|---------------------|
| – 2.38 miles of 6-inch A/C pipe | \$440,725 |
| – 0.75 miles of 4-inch A/C pipe | \$127,380 |
| – 8.97 miles of 8-inch PVC pipe | \$1,658,430 |
| – 3.80 miles of 6-inch PVC pipe | \$696,400 |
| – 0.17 miles of 4-inch PVC pipe | \$28,800 |
| – 0.02 miles of 8-inch HDPE pipe. | \$40,000 |
| – Two 250,000 gallon redwood storage tanks | \$750,000 |
| – Three 100,000 gallon redwood storage tanks | \$425,000 |
| – One 75,000 gallon redwood storage tank | \$150,000 |
| – One 40,000 gallon redwood storage tank | \$60,000 |
| – One 10,000 gallon redwood storage tank | \$10,000 |
| – Four 10-inch gate valves | \$3,900 |
| – One hundred 8-inch gate valves | \$87,501 |
| – Forty-nine 6-inch gate valves | \$27,440 |
| – Ten 4-inch gate valves | \$5,400 |
| – Four 40-foot wells | <i>(need value)</i> |
- **Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the SRCSD is \$5,963,116.
 - **List of Critical Facilities (owned by District):**

– Smith River Community Hall	\$1,500,192
– Four pump houses and associated controls	\$60,000
– Five booster houses and associated controls	\$250,000
– Maintenance structure	\$40,000
– Treatment structure	\$75,000
 - **Value of Critical Facilities**—The total value of critical facilities owned by the SRCSD is \$1,925,192.
 - **Value of Area Served**—The estimated value of the SRCSD service area is \$198,859,000.
 - **Current and Anticipated Service Trends**—The SRCSD is included in both the County of Del Norte General Plan and the Smith River Rancheria Tribal area plan. Both plans anticipate residential and non-residential Visitor-Serving Commercial growth in the SRCSD service area. Such growth would cause an increase in the number of housing units within the service area, as well as an increase in commercial facilities, thus requiring an expansion of the district’s service delivery system. It is anticipated that additional areas of development may wish to annex to the SRCSD. Such annexation would represent an increase in the size and value of the district’s service area and an increase in the number of users. This type of growth would also require an expansion of the district’s delivery system.

The district’s boundaries are shown in Figure 1-1 of this volume of the hazard mitigation plan.

7.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 7-1 lists all past occurrences of natural hazards within the jurisdiction. There do not appear to be sufficient records to provide supportable monetary impact figures for any specific hazard event listed.

7.4 NATURAL HAZARD RISK RANKING

Table 7-2 presents the ranking of the hazards of concern.

7.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- County of Del Norte General Plan and codes
- State of California codes.
- Drought control ordinance as required by law.

7.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 7-3 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 7-4 identifies the priority for each initiative. Table 7-5 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

7.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

A soils analysis of storage tank locations is needed to better determine the risk of landslide and strategies for mitigation.

**TABLE 7-1.
NATURAL HAZARD EVENTS**

Type of Event	Date	Type of Event	Date
Severe Storms/Flooding	4/5/1972	Severe Weather	12/15/2002
Winter Storms	10/3/1974	State Road Damage	1/1/2003
Severe Storms/Flooding	11/13/1981	Severe Weather/Lightning	5/30/2003
Winter Storms	2/9/1983	Earthquake	8/15/2003
Severe Storms/Flooding	2/18/1986	Severe Weather	9/17/2003
Wildland Fires	9/10/1987	Severe Weather	12/15/2003
Flood	11/22/1988	Severe Weather/Lightning	1/7/2005
Earthquake	4/25/1992	Severe Weather/Wind	1/8/2005
Severe Winter Storms	1/13/1995	Earthquake	6/14/2005
Severe Winter Storms	12/9/1995	Severe Weather/Wind	12/30/2005
Severe Storms/Flooding	1/4/1997	Severe Weather/Wind	1/1/2006
El Nino Floods	2/9/1998	Severe Storms/Landslides	2/3/2006
Earthquake	3/16/2000	Earthquake	3/25/2006
Earthquake	1/13/2001	Earthquake	7/16/2006
Earthquake	9/20/2001	Severe Weather/Wind	11/12/2006
Severe Storms	11/19/2001	Severe Weather/Wind	12/3/2007
Severe Weather	12/1/2001	Severe Weather/Wind	1/4/2008
Earthquake	6/17/2002	Severe Weather/Snow, Sleet, Blizzard	1/5/2008
Biscuit Wildfire	07/13/2002	Severe Weather/Wind	2/24/2008
Severe Weather	11/7/2002		

**TABLE 7-2.
NATURAL HAZARD RISK RANKING**

Rank	Hazard type	Estimate of Potential Dollar Losses to District-Owned Facilities Exposed to the Hazard	Probability of Occurrence ^a
1	Severe Weather	\$7,888,308	High
2	Flood	\$7,888,308	High
3	Earthquake	\$7,888,308	High
4	Landslide	\$1,500,000	High
5	Wildfire	\$0.00 Facilities not at risk: Water use.	High
6	Tsunami	\$500,000	Low
7	Dam Failure	\$0.00—No facilities at risk.	Low

a. High = Hazard event is likely to occur within 25 years; Medium = Hazard event is likely to occur within 100 years; Low = Hazard event is not likely to occur within 100 years

**TABLE 7-3.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to New or Existing Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
SRCS D 1—Local power generation facilities. May include purchase of generators as well as study of feasibility of wind/solar generation facilities in the Smith River area.						
Existing New	Severe weather, wildfire, flood.	2, 6, 9, 10	SRCS D	\$50,000	District finances, CDBG, USDA, FEMA, CEC	Generator: Within 1 year of funding. Study: Within 5 years of funding
SRCS D 2—Seismic retrofit of critical facilities, including hall improvements necessary for use as an emergency shelter.						
Existing	Earthquake, flood, severe weather, wildfire, tsunami (evacuation point)	2, 6, 9	SRCS D	\$1,200,00 0	District finances, CDBG, USDA, FEMA, CDWR, CWRCB, CDPH	Within 5 years of funding.
SRCS D 3—Seismic retrofit of vulnerable pipe, and other water treatment/delivery infrastructure.						
Existing	Earthquake	2, 4, 6, 9	SRCS D	\$2,000,00 0	District finances, CDBG, USDA, FEMA, CDWR, CWRCB, CDPH	Within 5 years of funding.
SRCS D 4—Replace wooden tanks with larger, stronger metal tanks, secure foundations, install additional hydrants. (In partnership with SRFPD)						
Existing	Earthquake, landslide, wildfire.	2, 6, 9	SRCS D	\$1,400,00 0	District finances, CDBG, USDA, FEMA, CDWR, CWRCB, CDPH	Within 5 years of funding.
SRCS D 5—Develop secondary water sources and infrastructure outside of hazard zones; improve filtration system to respond to increased turbidity caused by flood and higher bacterial count caused by drought.						
Existing	Earthquake, flood, severe weather, drought.	2, 6, 9	SRCS D	No estimate at this time.	District finances, CDBG, USDA, FEMA, CDWR, CWRCB, CDPH	Within 5 years of funding.
SRCS D 6—Public Education re: water conservation in drought conditions—encouragement of rainwater capture for firefighting use.						
Existing	Drought, wildfire.	3, 4, 5, 9	SRCS D	\$20,000	District finances, FEMA	Within 1 year of funding.

TABLE 7-3 (continued). HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to New or Existing Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line	
SRCS D 7— Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.							
New & Existing	All Hazards	All	SR CSD	Low	District Funds, FEMA grants for plan update	Short-Term, Ongoing	
SRCS D 8— Support countywide initiatives identified in Volume 1.							
New & Existing	All Hazards	All	SRCS D	Low	District funds	Short-Term, Ongoing	

TABLE 7-4. MITIGATION STRATEGY PRIORITY SCHEDULE							
Initiative	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project be Funded under Existing Programs/ Budgets?	Priority ^a
1	4	High	High	Yes	Yes	No	Medium
2	3	1.5 million	\$1.2 million	Yes	Yes	No	Medium
3	4	2.1 million	\$2.0 million	Yes	Yes	No	Medium
4	3	1.4 million	\$1.4 million	Yes	Yes	No	Medium
5	3	Medium	Medium	Yes	Yes	No	Medium
6	4	Low	Low	Yes	Yes	Partially	High
7	10	High	Low	Yes	Maybe	Yes	High
8	10	High	Low	Yes	No	Yes	High

a. Explanation of priorities

- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

**TABLE 7-5.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard of Concern	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	5, 7, 8	5, 6, 7, 8	6, 7, 8	5, 7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8
Earthquake	2, 3	7, 8	7, 8	7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8
Flood	7, 8	7, 8	7, 8	7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8
Landslide	7, 8	7, 8	7, 8	7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8
Severe Weather	7, 8	1, 7, 8	7, 8	7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8
Tsunami	7, 8	7, 8	7, 8	7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8
Wild Fire	7, 8	1, 4, 5, 6	6, 7, 8	1, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

7.8 ADDITIONAL COMMENTS

At minimum, all hazard events require the SRCSD to inspect its facilities and infrastructure for damage. Other predictable impacts are as follows:

- Severe Weather—There is a risk of wind, rain, and falling tree damage to critical facilities, and above-ground infrastructure. The flooding that often accompanies severe weather causes excess turbidity in the water supply and can result in erosion of the creek banks near the SRCSD’s well sites. Severe weather also commonly results in power losses, which cause a loss of water service delivery and street-lighting services.
- Flood—Flooding causes excess turbidity in the water supply and can result in erosion of the creek banks near the SRCSD’s well sites. A severe flood could run the risk of overwhelming the well sites and critically damaging pumping, treatment and maintenance facilities.
- Earthquake—There is a risk of critical facility collapse, infrastructure damage, especially to older pipes, and power disruption.
- Landslide—Most of the SRCSD’s water storage tanks and a portion of its water delivery infrastructure are located on hillsides that may be at risk for landslide.
- Wildfire—Historically, in the event of a large wildfire, the SRCSD’s water resources have been used in the firefighting efforts, whether or not the fire was located within the SRCSD’s

service area. In the event of a wildfire located within the SRCSD's service area, the SRCSD's infrastructure is critical to firefighting efforts.

- Drought—The SRCSD does not report water supply impacts from historic droughts; however, drought conditions can cause an increase in the level of bacteria in the water, requiring increased treatment and filtration. Drought conditions can also increase the risk of wildfire and its associated impacts as described above.
- Tsunami—The majority of the SRCSD service area appears to be outside of the tsunami hazard area as defined by the planning maps; however, there does appear to be some risk of flooding in areas that could threaten the SRCSD's wells and damage pumping, treatment and maintenance facilities. In addition, the Smith River Community Hall would be necessary as a shelter location in the event of evacuation from areas more likely to be impacted.
- Dam Failure—Dam failure is the only hazard that is highly unlikely to impact the SRCSD, although it is possible that evacuees would need the shelter facilities of the Smith River Community Hall.

CHAPTER 8. SMITH RIVER FIRE PROTECTION DISTRICT ANNEX

8.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name: Jim Floyd
Title: Board Member
Mailing address: c/o P.O. Box 187
Smith River, CA 95567
Telephone #: (707) 487-2571
E-mail Address: jfloyd@co.del-norte.ca.gov

Alternate Point of Contact

Name: Linda Crockett
Title: Board Member
Telephone: N/A
Email Address: crockett.lilies@charterinternet.com

8.2 DISTRICT PROFILE

The Smith River Fire Protection District (SRFPD) was formed to provide local fire protection, rescue and emergency medical services to the area around Smith River, California. The date of the District's formation is reported differently in different documents. The district, or at least a service area around Smith River, may have been established as early as 1949. Other dates reported by different sources include July 23, 1956, and sometime in the early 1970s. On April 21, 1983, the SRFPD adopted a resolution annexing the Hiouchi, California area into the District.

The SRFPD has three paid staff members, a fire chief, an assistant fire chief and a secretary, and approximately 23 volunteer firefighters. The department has either formal or informal reciprocal aid agreements with the Smith River Rancheria Tribal area and with surrounding local, state and federal agencies. The SRFPD is governed by a five-member elected Board of Directors, which assumes responsibility for the adoption of this plan and will oversee its implementation.

The SRFPD operates three fire stations, the main hall in Smith River, a station in Hiouchi, and a pole-barn structure on Low Divide Road. The district responds to approximately 280 calls per year. Due to the rural nature of the district, the availability of fire hydrants is limited to the township areas of Smith River and Hiouchi. A large portion of the district is supplied by well water, and firefighting is accomplished using a tanker truck.

The SRFPD is primarily funded through secured, unsecured and supplemental property taxes, with supplemental funds coming from assessment fees, grant funding and reimbursement for services provided to other agencies. Baseline information about the district is as follows:

- **Land Area Served**—Approximately 25 square miles.
- **Population Served**—The SRFPD service area roughly corresponds to the Smith River Planning Area and the Hiouchi Planning Area as identified in the hazard mitigation planning process. The identified population of this area is 2,765.
- **Land Area Owned**—The SRFPD owns the land on which the main fire station in Smith River is located, an area of approximately 4,812 square feet.
- **List of Critical Infrastructure/Equipment and Value:**
 - 1958 Ford Pumper Truck \$9,000

- | | |
|---|-----------|
| – 1994 Pierce Pumper Truck | \$166,000 |
| – 1996 Ford Tanker Truck | \$114,000 |
| – 1995 GMC First Responder | \$35,000 |
| – 1978 Kenworth Tanker Truck | \$81,000 |
| – 2001 HME Pumper Truck | \$188,000 |
| – 1997 Ford Rescue LT | \$87,000 |
| – Pace American Tandem Axel Trailer & Equipment | \$3,602 |
| – Airvac Exhaust Removal System | \$16,696 |
| – Extrication Equipment—Cutter | \$4,806 |
| – Extrication Equipment—Spreader | \$5,917 |
| – Extrication Equipment—Air Pump | \$8,605 |
| – Extrication Equipment—Hoses | \$2,050 |
| – Extrication Equipment—Rescue Jack | \$5,394 |
| – Extrication Equipment—Misc. | \$10,314 |
| – First Responder Medical Rescue Equipment | \$2,390 |
| – SCBA Equipment | \$41,010 |
- **Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the SRFPD is \$780,784.
 - **List of Critical Facilities (owned by District):**

– Smith River Fire Station, 245 N. Haight, Smith River	\$447,174
– Hiouchi Fire Station, 105 Dunklee Ln., Hiouchi	\$108,927
– Low Divide Fire Station, 1700 Signal Peak Rd.	\$149,058
 - **Value of Critical Facilities**—The total value of critical facilities owned by the SRFPD is \$705,159.
 - **Value of Area Served**—The estimated value of the SRFPD service area is \$259,747,000.
 - **Current and Anticipated Service Trends**—The SRFPD is included in both the County of Del Norte General Plan and the Smith River Rancheria Tribal area plan. Both plans anticipate residential and non-residential Visitor-Serving Commercial growth in the SRFPD service area. Such growth would cause an increase in the number of housing units within the service area, as well as an increase in commercial facilities, thus presenting a potential increase in the demand for fire protection services.

The district’s boundaries are shown in Figure 1-1 of this volume of the hazard mitigation plan.

8.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 8-1 lists all past occurrences of natural hazards within the jurisdiction. There do not appear to be sufficient records to provide supportable monetary impact figures for any specific hazard event listed.

8.4 NATURAL HAZARD RISK RANKING

Table 8-2 presents the ranking of the hazards of concern.

8.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- County of Del Norte General Plan and codes
- State of California codes.

8.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 8-3 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 8-4 identifies the priority for each initiative. Table 8-5 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

8.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The following studies are needed:

- Soils analysis to determine risk to facilities due to landslides.
- Study to determine feasibility of larger local power generation facilities, such as solar or wind facilities to mitigate power outages resulting from natural hazards.

**TABLE 8-1.
NATURAL HAZARD EVENTS**

Type of Event	Date	Type of Event	Date
Severe Storms/Flooding	4/5/1972	Severe Weather	12/15/2002
Winter Storms	10/3/1974	State Road Damage	1/1/2003
Severe Storms/Flooding	11/13/1981	Severe Weather/Lightning	5/30/2003
Winter Storms	2/9/1983	Earthquake	8/15/2003
Severe Storms/Flooding	2/18/1986	Severe Weather	9/17/2003
Wildland Fires	9/10/1987	Severe Weather	12/15/2003
Flood	11/22/1988	Severe Weather/Lightning	1/7/2005
Earthquake	4/25/1992	Severe Weather/Wind	1/8/2005
Severe Winter Storms	1/13/1995	Earthquake	6/14/2005
Severe Winter Storms	12/9/1995	Severe Weather/Wind	12/30/2005
Severe Storms/Flooding	1/4/1997	Severe Weather/Wind	1/1/2006
El Nino Floods	2/9/1998	Severe Storms/Landslides	2/3/2006
Earthquake	3/16/2000	Earthquake	3/25/2006
Earthquake	1/13/2001	Earthquake	7/16/2006
Earthquake	9/20/2001	Severe Weather/Wind	11/12/2006
Severe Storms	11/19/2001	Severe Weather/Wind	12/3/2007
Severe Weather	12/1/2001	Severe Weather/Wind	1/4/2008
Earthquake	6/17/2002	Severe Weather/Snow, Sleet, Blizzard	1/5/2008
Biscuit Wildfire	07/13/2002	Severe Weather/Wind	2/24/2008
Severe Weather	11/7/2002		

**TABLE 8-2.
NATURAL HAZARD RISK RANKING**

Rank	Hazard type	Estimate of Potential Dollar Losses to District-Owned Facilities Exposed to the Hazard	Probability of Occurrence ^a
1	Severe Weather	\$1,484,943	High
2	Wildfire	\$548,985	High
3	Earthquake	\$1,484,943	High
4	Flood	\$548,985	High
5	Landslide	\$548,985	High
6	Tsunami	\$0.00	Low
7	Dam Failure	\$0.00	Low

a. High = Hazard event is likely to occur within 25 years; Medium = Hazard event is likely to occur within 100 years; Low = Hazard event is not likely to occur within 100 years

**TABLE 8-3.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to New or Existing Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Time-line
SRFD 1—Local power generation facilities. May include purchase of generators as well as study of feasibility of wind/solar generation facilities in the Smith River area in partnership with SRCSD.						
Existing	Severe weather, wildfire, flood.	2,6,9,10	SRFPD	\$50,000	District finances, CDBG, USDA, FEMA, CEC, ISRF	Generator: Within 1 year of funding. Study: Within 5 years of funding
SRFD 2—Seismic retrofit of fire halls and other improvements needed to provide emergency shelter facilities.						
Existing	Earthquake	2,6,9	SRFPD	\$1.2 million	District finances, CDBG, USDA, FEMA	Within 5 years of funding.
SRFD 3—Public Education						
Existing	All hazards, focus on. Wildfire	3,4,5,9,10	SRFPD	\$20,000	District Finances; FEMA	Within 5 years of funding.
SRFD 4—Mapping of alternative evacuation routes and routes to reach fire sites and those stranded by hazards in partnership with Del Norte County, SRCSD and Big Rock CSD.						
Existing	All that would block main routes.	2,5,9	To be Determined	\$10,000	Partner agency finances, FEMA	Within 5 years of funding.
SRFD 5—Firefighter training in specialized techniques for wildfires and fires during drought conditions.						
Existing	Wildfire, drought.	2,3,4,8,9	SRFPD	\$20,000	District finances, CalFIRE Wildland Fire grants, FEMA	Within 1 year of funding.
SRFD 6—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7.						
New & Existing	All Hazards	All	SRFPD	Low	District Funds, FEMA grants for plan update	Short-Term, Ongoing
SRFD 7—Support countywide initiatives identified in Volume 1.						
New & Existing	All Hazards	All	SRFPD	Low	District funds	Short-Term, Ongoing

**TABLE 8-4.
MITIGATION STRATEGY PRIORITY SCHEDULE**

Initiative	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project be Funded under Existing Programs/ Budgets?	Priority ^a
1	4	High	High	Yes	Yes	No	Medium
2	3	\$1.5 million	\$1.2 million	Yes	Yes	No	Medium
3	5	Low	Low	Yes	Yes	Partially	High
4	3	Low	Low	Yes	Yes	No	Medium
5	5	Low	Low	Yes	Yes	Partially	High
6	10	High	Low	Yes	Maybe	Yes	High
7	10	High	Low	Yes	No	Yes	High

- a. Explanation of priorities
- High Priority: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium Priority: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - Low Priority: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

**TABLE 8-5.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard of Concern	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	6, 7	5, 6, 7	3, 4, 6, 7	6, 7	1, 4, 6, 7	6, 7
Earthquake	2, 6, 7	2, 6, 7	3, 4, 6, 7	6, 7	1, 4, 6, 7	1, 2, 6, 7
Flood	6, 7	6, 7	3, 4, 6, 7	6, 7	1, 4, 6, 7	6, 7
Landslide	6, 7	6, 7	3, 4, 6, 7	6, 7	1, 4, 6, 7	6, 7
Severe Weather	6, 7	6, 7	3, 4, 6, 7	6, 7	1, 4, 6, 7	1, 6, 7
Tsunami	6, 7	6, 7	6, 7	6, 7	6, 7	6, 7
Wild Fire	6, 7	5, 6, 7	3, 4, 6, 7	6, 7	1, 4, 6, 7	6, 7

Notes:

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

8.8 ADDITIONAL COMMENTS

The SRFPD is dependent on the water systems of the Smith River Community Services District and the Big Rock Community Services District. The SRFPD plans to partner with both agencies on initiatives to improve, strengthen, and expand the water systems on which it depends.

At minimum, all hazard events require the SRFPD to inspect its facilities and infrastructure for damage and to respond to requests for assistance from residents of its district. Other predictable impacts are as follows:

- Severe Weather—There is a risk of wind, rain, and falling tree damage to critical facilities, and above-ground infrastructure. Severe weather also commonly results in power losses, which cause a loss of power to critical facilities.
- Flood—The primary impact of flooding is the need for the SRFPD to respond to calls for emergency assistance and evacuation of residents trapped or potentially trapped by floodwaters.
- Earthquake—There is a risk of critical facility collapse, infrastructure damage, especially to older water pipes on which the SRFPD depends for firefighting capacity, and power disruption.
- Landslide—The primary impact of landslides is the need for the SRFPD to respond to calls for emergency assistance and evacuation of residents trapped or potentially trapped by landslides.
- Wildfire—The SRFPD would be responsible for fighting wildfires within its service area and would likely be called upon to assist in fighting wildfires outside of its service area as a result of both formal and informal mutual aid agreements.
- Drought—Drought conditions increase the risk of wildfire and its associated impacts as described above. Fighting wildfires in drought conditions may require specialized techniques and early identification of water sources.
- Tsunami—The majority of the SRFPD service area appears to be outside of the tsunami hazard area as defined by the planning maps; however, there does appear to be some risk of flooding in areas that could threaten the wells and damage pumping, treatment and maintenance facilities on which the SRFPD depends for firefighting capacity. In addition, the SRFPD's stations could be necessary as shelter locations in the event of evacuation from areas more likely to be impacted and the SRFPD's emergency response capability would likely be necessary to assist in impacted areas.
- Dam Failure—Dam failure is the only hazard that is highly unlikely to impact the SRFPD, although it is possible that evacuees will need the shelter facilities of the SRFPD's stations.

Crescent City/Del Norte County
Hazard Mitigation Plan
Volume 2: Planning Partner Annexes

APPENDIX A.
PLANNING PARTNER EXPECTATIONS

April 2010

PLANNING PARTNER EXPECTATIONS

ACHIEVING DMA COMPLIANCE FOR ALL PLANNING PARTNERS

One of the goals of the multi-jurisdictional approach to hazard mitigation planning is to achieve compliance with the Disaster Mitigation Act (DMA) for all participating members in the planning effort. DMA compliance must be certified for each member in order to maintain eligibility for the benefits under the DMA. Whether our planning process generates 10 individual plans or 1 large plan that has a chapter for each partner jurisdiction, the following items must be addressed to achieve DMA compliance for each Coalition member:

- ✓ **Participate in the process. It must be documented in the plan that each planning partner “participated” in the process that generated the plan. There is flexibility in defining “participation”. Participation can vary based on the type of planning partner (i.e.: City or County, vs. a Special Purpose District). However, the level of participation must be defined and the extent for which this level of participation has been met for each partner must be contained in the plan context.**
- ✓ **Review of existing documents pertinent to each jurisdiction to identify policies or recommendations that are not consistent with those documents reviewed in producing the “parent” plan or have policies and recommendations that compliment the hazard mitigation initiatives selected (i.e.: comp plans, basin plans or hazard specific plans).**
- ✓ **Personalize the Risk Assessment for each jurisdiction. Remove hazards not associated with the defined jurisdictional area or redefine vulnerability based on a hazard’s impact to a jurisdiction. This phase will include:**
 - A ranking of the risk
 - A description of the number and type of structures at risk
 - An estimate of the potential dollar losses to vulnerable structures
 - A general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- ✓ **Capability assessment. Each planning partner must identify and review their individual regulatory, technical and financial capabilities with regards to the implementation of hazard mitigation actions.**
- ✓ **Personalize mitigation recommendations. Identify and prioritize mitigation recommendations specific to the each jurisdiction’s defined area.**
- ✓ **Create an Action Plan.**

- ✓ **Each jurisdiction must present the Plan to the public for comment at least once, within 2 weeks prior to adoption.**
- ✓ **Plan must be adopted**

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

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

- A. A “Letter of Intent to participate” or Resolution to participate to the Humboldt County Planning Team (see exhibit A).
- B. Designate a lead point of contact for this effort. This designee will be listed as the Hazard mitigation point of contact for your jurisdiction in the plan.
- C. Support and participate in the selection and function of the Steering Committee selected to oversee the development of this plan.
- D. Provide support in the form of mailing list, possible meeting space, media such as newsletters, newspapers or direct mailed brochures, required to implement the public involvement strategy formed by the Steering Committee.
- E. Participate in the process. There will be many opportunities as this plan evolves to participate. Opportunities such as:
 - a. Steering Committee meetings.
 - b. Public meetings or open houses.
 - c. Workshops/ Planning Partner specific training sessions.
 - d. Public review and comment periods prior to adoption

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

- F. There will be 1 **mandatory** workshop that all planning partners will be required to attend. This workshop will cover the proper completion of the jurisdictional annex template which is the basis for each partner's jurisdictional chapter in the plan. Failure to have a representative at this workshop will disqualify the planning partner from participation in this effort. The schedule for this workshop will be such that all committed planning partners will be able to attend.
- G. After participation in the mandatory template workshop, each partner will be required to complete their template and provide it to the planning team in the time frame established by the Steering Committee.
- H. All technical studies, plans, ordinances specific to hazards identified within the defined planning area. Each partner will be expected to perform a "consistency review" of all such documents to determine the existence of plans, studies or ordinances not consistent with the same such documents reviewed in the preparation of the County (parent) Plan. For example: if your community has a floodplain management plan that makes recommendations that are not consistent with any of the County's Basin Plans, that plan will need to be reviewed for probable incorporation into the plan for your area.
- I. Each partner will be expected to review the Risk Assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide the jurisdiction specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.
- J. Each partner will be expected to review and determine if the mitigation recommendations chosen in the parent plan will meet the needs of its jurisdiction. Projects within each jurisdiction consistent with the parent plan recommendations will need to be identified and prioritized, and reviewed to determine their benefits vs. costs.
- K. Each partner will be required to create its own action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
- L. Each partner will be required to sponsor at least one public meeting to present the draft plan at least 2 weeks prior to adoption.
- M. Each partner will be required to formally adopt the plan.

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

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

Exhibit A
Example Letter of Intent to Participate

Crescent City-Del Norte County Hazard Mitigation Planning Partnership
Tetra Tech, Inc..
1420 5th Ave., Suite 600
Seattle, WA 98101-2357

Dear Crescent City-Del Norte County Planning Partnership,

Please be advised that the _____ (*insert City or district name*) is committed to participating in the development of the Crescent City-Del Norte County Natural Hazards Mitigation Plan. As the Chief Administrative Official for this jurisdiction, I certify that I will commit all necessary resources in order to meet Partnership expectations as outlined in the “Planning Partners expectations” document provided by the planning team, in order to obtain Disaster Mitigation Act (DMA) compliance for our jurisdiction.

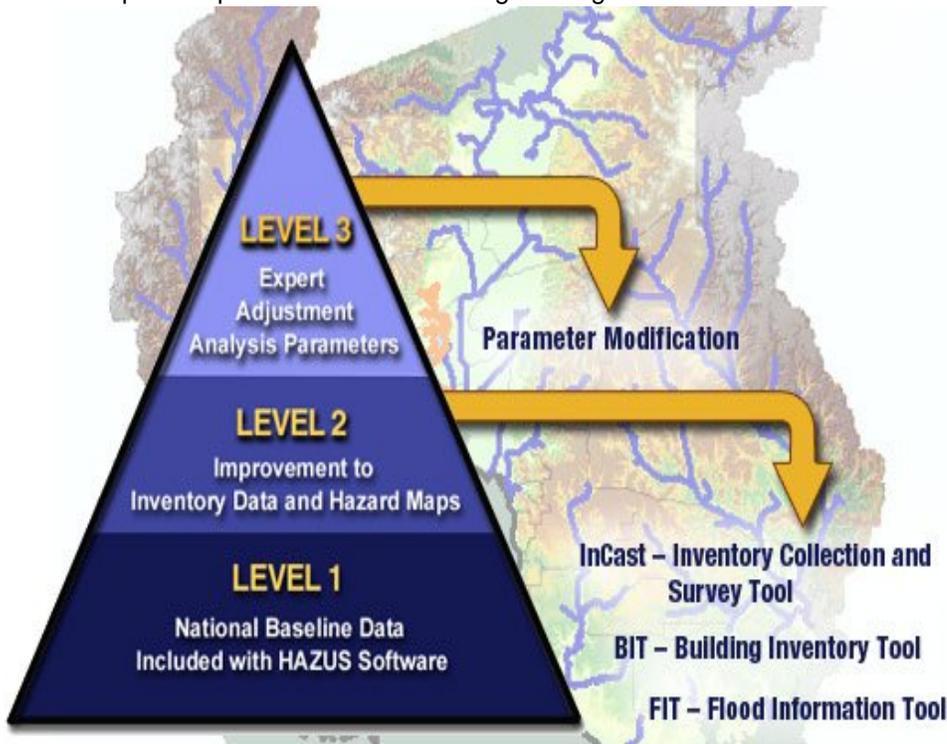
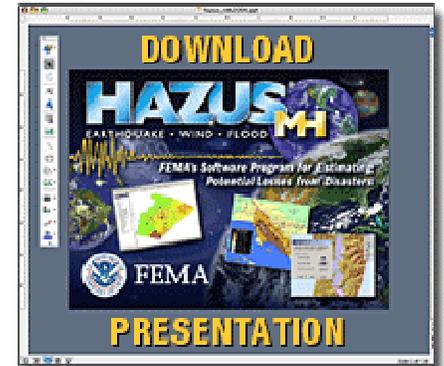
Mr./Ms. _____ will be the district’s point of contact for this process and they can be reached at (*insert: address, phone number and e-mail address*).

Sincerely,

Exhibit B Overview of HAZUS

Overview of HAZUS-MH (Multi-Hazard)

HAZUS-MH, is a nationally applicable standardized methodology and software program that contains models for estimating potential losses from **earthquakes**, **floods**, and **hurricane winds**. HAZUS-MH was developed by the Federal Emergency Management Agency (FEMA) under contract with the National Institute of Building Sciences (NIBS). NIBS maintains committees of wind, flood, earthquake and software experts to provide technical oversight and guidance to HAZUS-MH



development. Loss estimates produced by HAZUS-MH are based on current scientific and engineering knowledge of the effects of hurricane winds, floods, and earthquakes. Estimating losses is essential to decision-making at all levels of government, providing a basis for developing mitigation plans and policies, emergency preparedness, and response and recovery planning.

HAZUS-MH uses state-of-the-art geographic information system (GIS) software to map and display hazard data and the results

of damage and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of hurricane winds, floods, and earthquakes on populations. The latest release, HAZUS-MH MR1, is an updated version of HAZUS-MH that incorporates many new features which improve both the speed and functionality of the models. For information on software and hardware requirements to run HAZUS-MH MR1, see HAZUS-MH [Hardware and Software Requirements](#).

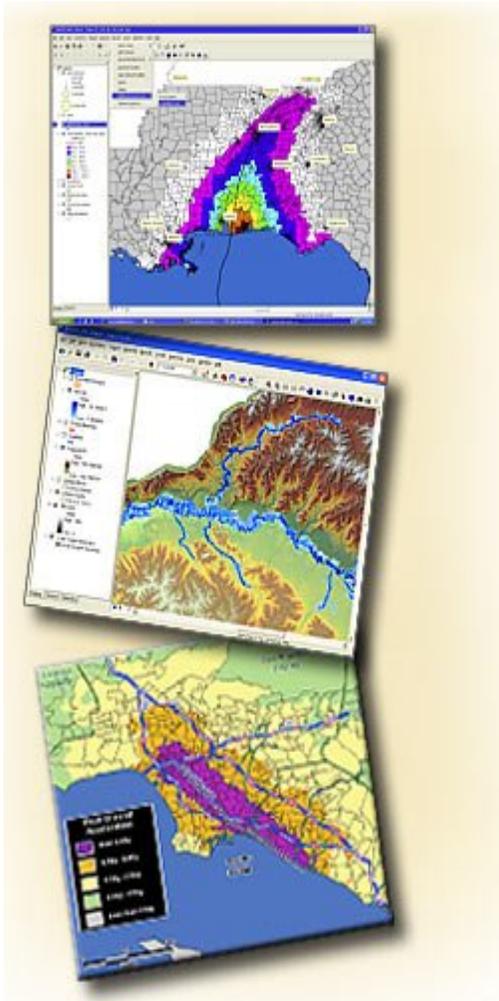
HAZUS-MH Analysis Levels

HAZUS-MH provides for three levels of analysis:

- A **Level 1** analysis yields a rough estimate based on the nationwide database and is a great way to begin the risk assessment process and prioritize high-risk communities.

Planning Partner Expectations
Crescent City-Del Norte County Hazard Mitigation Plan

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



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

HAZUS-MH Models

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

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

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

The updated earthquake model released with HAZUS-MH includes:

- The (September 2002) National Hazard Maps

Planning Partner Expectations

Crescent City-Del Norte County Hazard Mitigation Plan

- Project '02 attenuation functions
- Updated historical earthquake catalog (magnitude 5 or greater)
- Advanced Engineering Building Module for single and group building mitigation analysis

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

Find brochures, presentations, and additional information about HAZUS-MH at the [HAZUS Library](#).

Crescent City/Del Norte County
Hazard Mitigation Plan
Volume 2: Planning Partner Annexes

APPENDIX B.
**PROCEDURES FOR LINKING TO THE CRESCENT CITY/
DEL NORTE COUNTY HAZARD MITIGATION PLAN**

April 2010

APPENDIX B. PROCEDURES FOR LINKING TO THE CRESCENT CITY/ DEL NORTE COUNTY HAZARD MITIGATION PLAN

Not all eligible local governments within Del Norte County are included in the Crescent City/Del Norte County Hazard Mitigation Plan. It is assumed that some or all of these non-participating local governments may chose to “link” to the Plan at some point to gain eligibility for programs under the DMA. In addition, some of the current partnership may not continue to meet eligibility requirements due to a lack of participation as prescribed by the plan. The following “linkage” procedures define the requirements established by the Plan’s Steering Committee and all planning partners for dealing with an increase or decrease in the number of planning partners linked to this plan. It should be noted that a currently non-participating jurisdiction within the defined planning area is not obligated to link to this plan. These jurisdictions can chose to do their own “complete” plan that addresses all required elements of section 201.6 of 44CFR.

INCREASING THE PARTNERSHIP THROUGH LINKAGE

The annual time period for the linkage process will be from February 1 to the last calendar work day of April during any year. Eligible linking jurisdictions are instructed to complete all of the following procedures during this time frame:

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

Name
Title
Address
City, State ZIP
Phone
e-mail

The POC will provide a linkage packages that includes:

- Copy of Volume 1 and 2 of the plan
 - Planning partner’s expectations package.
 - A sample “letter of intent” to link to the Hazard Mitigation Plan.
 - A Special Purpose District or City template and instructions.
 - Catalog of Hazard Mitigation Alternatives
 - A “request for technical assistance” form.
 - A copy of Section 201.6 of Chapter 44, the Code of Federal Regulations (44CFR), which defines the federal requirements for a Local Hazard Mitigation Plan.
- The new jurisdiction will be required to review both volumes of the Hazard Mitigation Plan, which includes the following key components for the planning area:
 - The planning area risk assessment
 - Goals and objectives

- Plan implementation and maintenance procedures
- Comprehensive review of alternatives
- County-wide initiatives.

Once this review is complete, the jurisdiction will complete its specific annex using the template and instructions provided by the POC. Technical assistance can be provided upon request by completing the request for technical assistance (TA) form provided in the linkage package. This TA may be provided by the POC or any other resource within the Planning Partnership such as a member of the Steering Committee or a currently participating City or Special Purposes District partner. The POC will determine who will provide the TA and the possible level of TA based on resources available at the time of the request.

- The new jurisdiction will be required to develop a public involvement strategy that ensures the public’s ability to participate in the plan development process. At a minimum, the new jurisdiction must make an attempt to solicit public opinion on hazard mitigation at the onset of this linkage process and a minimum of one public meeting to present their draft jurisdiction specific annex for comment, prior to adoption by the governing body. The Planning Partnership will have resources available to aid in the public involvement strategy such as the Plan website. However, it will be the new jurisdiction’s responsibility to implement and document this strategy for incorporation into its annex. It should be noted that the Jurisdictional Annex templates ***do not*** include a section for the description of the public process. This is because the original partnership was covered under a uniform public involvement strategy that covered the planning area described in Volume 1 of the plan. Since new partners were not addressed by that strategy, they will have to initiate a new strategy, and add a description of that strategy to their annex. For consistency, new partners are encouraged to follow the public involvement format utilized by the initial planning effort as described in Volume 1 of the plan.
- Once their public involvement strategy is completed and they have completed their template, the new jurisdiction will submit the completed package to the POC for a pre-adoption review to ensure conformance with the Regional plan format.
- The POC will review for the following:
 - Documentation of Public Involvement strategy
 - Conformance of template entries with guidelines outlined in instructions
 - Chosen initiatives are consistent with goals, objectives and mitigation catalog of the Planning Area hazard mitigation plan
 - A Designated point of contact
 - A ranking of risk specific to the jurisdiction.

The POC may utilize members of the Steering Committee or other resources to complete this review. All proposed linked annexes will be submitted to the Steering Committee for review and comment prior to submittal to the California Office of Emergency Services (CAOES).

- Plans approved and accepted by the Steering Committee will be forwarded to the CAOES for review with a cover letter stating the forwarded plan meets local approved plan standards and whether the plan is submitted with local adoption or for criteria met/plan not adopted review.
- CAOES will reviews plans for federal compliance. Non-Compliant plans are returned to the Lead agency for correction. Compliant plans are forwarded to FEMA Region IX office for review with annotation as to the adoption status.

- FEMA Region IX reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. Region IX notifies new jurisdiction of results of review with copies to CAOES and approved planning authority.
- New jurisdiction corrects plans shortfalls (if necessary) and resubmits to CAOES through the approved plan lead agency.
- For plans with no shortfalls from the Region IX review that have not been adopted, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards adoption resolution to Region IX with copies to lead agency and CAOES.
- Region IX Director notifies new jurisdiction governing authority of plan approval.

The new jurisdiction plan is then included with the Regional plan with the commitment from the new jurisdiction to participate in the ongoing plan implementation and maintenance.

DECREASING THE PARTNERSHIP

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

After receiving this notification, the POC shall immediately notify both CAOES and FEMA Region IX in writing that the partner in question is no longer covered by the Hazard Mitigation Plan, and that the eligibility afforded that partner under this plan should be rescinded based on this notification.

The second way a partner can be removed from the partnership is by failure to meet the participation requirements specified in the "Planning Partner Expectations" package provided to each partner at the beginning of the process, or the plan maintenance and implementation procedures specified under chapter 7 in Volume 1 of the plan. It should be noted that each partner agreed to these terms by adopting the plan.

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

- Are progress reports being submitted annually by the specified time frames?
- Are partners notifying the POC of changes in designated points of contact?
- Are the partners supporting the Steering Committee by attending designated meetings or responding to needs identified by the body?
- Are the partners continuing to be supportive as specified in the Planning Partners expectations package provided to them at the beginning of the process?

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

- The POC will advise the Steering Committee of this pending action and provide evidence or justification for the action. Justification may include: multiple failures to submit annual

progress reports, failure to attend meetings determined to be mandatory by the Steering Committee, failure to act on the partner's action plan, or inability to reach designated point of contact after a minimum of 5 attempts.

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

Crescent City/Del Norte County
Hazard Mitigation Plan
Volume 2: Planning Partner Annexes

APPENDIX C.
JURISDICTIONAL ANNEX INSTRUCTIONS AND TEMPLATE
FOR MUNICIPALITIES

April 2010

INSTRUCTIONS FOR COMPLETING MUNICIPALITY ANNEX TEMPLATE

This document provides instructions for completing the annex template for city and county governments participating in multi-partner hazard mitigation planning. Assistance in completing the template will be available in the form of a workshop for all planning partners or one-on-one visits with each partner, depending on funding availability. Any questions on completing the template should be directed to:

Rob Flaner
Tetra Tech, Inc.
90 South Blackwood Ave.
Eagle, ID 83616
(208) 939-4391
e-mail: rflaner@msn.com

Please provide both a hard copy and digital copy of the completed template to Tetra Tech upon completion.

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials **before** you begin the process of filling in the template:

- Summary-of-loss matrix for the hazard mitigation plan
- Results from the hazard mitigation plan questionnaire
- Catalog of mitigation alternatives
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM)

A Note About Software:

The template for the municipal jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

CHAPTER NUMBER AND TITLE

In the chapter title at the top of Page 1, type in the complete official name of your jurisdiction (The City of Metropolis, Jefferson County, etc.). At this time, also change the name in the “header” box on Page 3, using the same wording.

Note that the template is set up as Chapter “X.” Please leave all references to “X” in the template as they are. Once all templates are received, chapter numbering will be assigned for incorporation into the final plan.

HAZARD MITIGATION PLAN POINT OF CONTACT

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

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

JURISDICTION PROFILE

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

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Chronological List of Hazard Events

In Table X-1, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the summary of natural hazard events within risk assessment of the overall hazard mitigation plan. Potential sources of damage information include:

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

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of \$1,000 in any rolling 10-year period since 1978. In the space provided in the text for Section X.3, indicate the number of any FEMA-identified Repetitive Flood Loss properties in your jurisdiction

Example Jurisdiction Profile:

- **Date of Incorporation**—1858
- **Current Population**—17,289 as of July 2006
- **Population Growth**—Based on the data tracked by the California Department of Finance, Arcata has experienced a relatively flat rate of growth. The overall population has increased only 3.4% since 2000 and has averaged 0.74% per year from 1990 to 2007
- **Location and Description**—The City of Arcata is located on California's redwood coast, approximately 760 miles north of Los Angeles and 275 miles north of San Francisco. The nearest seaport is Eureka, five miles south on Humboldt Bay. Arcata is the home of Humboldt State University and is situated between the communities of McKinleyville to the north and Blue Lake to the east. It sits at the intersection of US Highway 101 and State Route 299.
- **Brief History**—The Arcata area was settled during the California gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resource. Arcata was incorporated in 1858 and by 1913 the Humboldt Teachers College, a predecessor to today's Humboldt State University was founded in Arcata. Recently, the presence of the college has come to shape Arcata's population into a young, liberal, and educated crowd. In 1981 Arcata developed the Arcata Marsh and Wildlife sanctuary, an innovative environmentally friendly, sewage treatment enhancement system.
- **Climate**—Arcata's weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80% of that falling in the six-month period of November through April. The average year-round temperature is 59°F. Humidity averages between 72 and 87 percent. Prevailing winds are from the north, and average 5 mph.
- **Governing Body Format**—The City of Arcata is governed by a five-member City Council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the City Manager's Office. The City has 13 Committees, Commissions and Task Forces, which report to the City Council.
- **Development Trends**—Anticipated development levels for Arcata are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing and a push for more secondary mother-in-law units on properties.

The City of Arcata adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with such a plan. Future growth and development in the City will be managed as identified in the general plan.

(your technical assistance provider will be able to help you confirm this information). If you have none, indicate “none” in the space provided.

Next, indicate the number (if any) of repetitive loss structures in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure. If you do not know the answer to this question, the planning team will provide it for you.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

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

Hazard Type	Probability	Probability Factor

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

Determine Potential Impacts of Each Hazard

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

Impacts on People

To assess impacts on people, values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- High Impact—50% or more of the population is exposed to a hazard (Impact Factor = 3)
- Medium Impact—25% to 49% of the population is exposed to a hazard (Impact Factor = 2)
- Low Impact—25% or less of the population is exposed to the hazard (Impact Factor = 1)
- No impact—None of the population is exposed to a hazard (Impact Factor = 0)

TABLE 2. HAZARD IMPACT ON PEOPLE			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *property value exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to exposed structures, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Exposed Structures

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- High Impact—30% or more of the total assessed property value is exposed to a hazard (Impact Factor = 3)
- Medium Impact—15% to 29% of the total assessed property value is exposed to a hazard (Impact Factor = 2)
- Low Impact—14% or less of the total assessed property value is exposed to the hazard (Impact Factor = 1)
- No impact—None of the total assessed property value is exposed to a hazard (Impact Factor = 0)

TABLE 4. HAZARD IMPACT ON PROPERTY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Economy

To assess impacts on the economy, values are assigned based on the percentage of the total *property value vulnerable* to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total assessed value of property in the county. For some hazards, such as wildland fire, landslide and severe weather, vulnerability is the same as exposure due to the lack of loss estimation tools specific to those hazards. In Table 5, list the potential impact of each hazard on the economy in your jurisdiction, along with its impact factor, as follows:

- High Impact—Estimated loss from the hazard is 20% or more of the total assessed property value (Impact Factor = 3)
- Medium Impact—Estimated loss from the hazard is 10% to 19% of the total assessed property value (Impact Factor = 2)
- Low Impact—Estimated loss from the hazard is 8% or less of the total assessed property value (Impact Factor = 1)
- No impact—No loss is estimated from the hazard (Impact Factor = 0)

Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy }

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Economy (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table X-2 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table X-2 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

CAPABILITY ASSESSMENT

Legal and Regulatory Capability

Describe the legal authorities available to your jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that can support hazard mitigation initiatives. In Table X-3, indicate “Yes” or “No” for each listed code, ordinance, requirement or planning document in each of the following columns:

- Local Authority—Enter “Yes” if your jurisdiction has prepared or adopted the identified item; otherwise, enter “No.” If yes, then enter the code or ordinance number and its date of adoption in the comments column.
- State or Federal Prohibitions—Enter “Yes” if there are any state or federal regulations or laws that would prohibit local implementation of the identified item; otherwise, enter “No.”
- Other Regulatory Authority—Enter “Yes” if there are any regulations that may impact your initiative that are enforced or administered by another agency (e.g., a state agency or special purpose district); otherwise, enter “No.”

- State Mandated—Enter “Yes” if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter “No.”

Administrative and Technical Capability

This section requires you to take inventory of the staff/personnel resources available to your jurisdiction to help with hazard mitigation planning and implementation of specific mitigation actions.

Complete Table X-4 by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?”. If yes, then enter the department and position title in the right-hand column.

Financial Resources

Identify what financial resources (other than the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Grant Program) are available to your jurisdiction for implementing mitigation initiatives.

Complete Table X-5 by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your eligibility for this resource.

Community Mitigation Related Classifications

Complete Table X-6 to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. For each program enter “Yes” or “No” in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter “N/A” in these columns if your jurisdiction is not participating.

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Complete Table X-7 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. These have been provided in the Steering Committee meeting minutes that were forwarded to you in the past.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment (Table X-5) to identify possible sources of funding.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project’s scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Technical assistance will be available to your jurisdiction in completing this section during the technical assistance visit.

Prioritization of Mitigation Initiatives

Complete the information in Table X-8 as follows:

- Initiative #—Indicate the initiative number from Table X-7.
- # of Objectives Met—Enter the number of objectives the initiative will meet.
- Benefits—Enter “High,” “Medium” or “Low” as follows:
 - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
 - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
 - Low: Long-term benefits of the project are difficult to quantify in the short term.
- Costs—Enter “High,” “Medium” or “Low” as follows:
 - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- Do Benefits Exceed the Cost?—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- Is the Project Grant-Eligible?—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- Can Project Be Funded Under Existing Program Budgets?—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- Priority— Enter “High,” “Medium” or “Low” as follows:
 - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table X-9 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- Prevention—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- Property Protection—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- Public Education and Awareness—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- Natural Resource Protection—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

CHAPTER X. [INSERT JURISDICTION NAME] ANNEX

X.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone #]
e-mail Address: [email address]

Alternate Point of Contact

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone #]
e-mail Address: [email address]

X.2 JURISDICTION PROFILE

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

- **Date of Incorporation**—[Insert Date of Incorporation]
- **Current Population**—[Insert Population] as of [Insert Date of Population Count]
- **Population Growth**—[Insert Discussion of Population Growth]
- **Location and Description**—[Insert Description of Location, Surroundings, Key Geographic Features]
- **Brief History**—[Insert Summary Discussion of Jurisdiction's History]
- **Climate**—[Insert Summary Discussion of Climate]
- **Governing Body Format**—[Insert Summary Description of Governing Body]
- **Development Trends**—[Insert Summary Description of Development]

X.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table X-1 lists all past occurrences of natural hazards within the jurisdiction. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: [Insert #]
- Number of Repetitive Flood Loss Properties that have been mitigated: [Insert #]

X.4 HAZARD RISK RANKING

Table X-2 presents the ranking of the hazards of concern.

X.5 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table X-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table X-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table X-5. Classifications under various community mitigation programs are presented in Table X-6.

X.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table X-7 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table X-8 identifies the priority for each initiative. Table X-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

X.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

[Insert text, if any]

X.8 ADDITIONAL COMMENTS

[Insert text, if any]

TABLE X-3. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code					
Zonings					
Subdivisions					
Stormwater Management					
Post Disaster Recovery					
Real Estate Disclosure					
Growth Management					
Site Plan Review					
Special Purpose (flood management, critical areas)					
Planning Documents					
General or Comprehensive Plan					
Floodplain or Basin Plan					
Stormwater Plan					
Capital Improvement Plan					
Habitat Conservation Plan					
Economic Development Plan					
Emergency Response Plan					
Shoreline Management Plan					
Post Disaster Recovery Plan					
Other					
Other					

TABLE X-4. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices		
Engineers or professionals trained in building or infrastructure construction practices		
Planners or engineers with an understanding of natural hazards		
Staff with training in benefit/cost analysis		
Floodplain manager		
Surveyors		
Personnel skilled or trained in GIS applications		
Scientist familiar with natural hazards in local area		
Emergency manager		
Grant writers		

TABLE X-5. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	
Capital Improvements Project Funding	
Authority to Levy Taxes for Specific Purposes	
User Fees for Water, Sewer, Gas or Electric Service	
Incur Debt through General Obligation Bonds	
Incur Debt through Special Tax Bonds	
Incur Debt through Private Activity Bonds	
Withhold Public Expenditures in Hazard-Prone Areas	
State Sponsored Grant Programs	
Development Impact Fees for Homebuyers or Developers	
Other	

TABLE X-6. COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Community Rating System			
Building Code Effectiveness Grading Schedule			
Public Protection			
Storm Ready			
Firewise			
Tsunami Ready			

TABLE X-7. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						

Crescent City/Del Norte County
Hazard Mitigation Plan
Volume 2: Planning Partner Annexes

APPENDIX D.
JURISDICTIONAL ANNEX INSTRUCTIONS AND TEMPLATE
FOR SPECIAL-PURPOSE DISTRICTS

April 2010

INSTRUCTIONS FOR COMPLETING SPECIAL-PURPOSE DISTRICT ANNEX TEMPLATE

This document provides instructions for completing the annex template for special-purpose districts participating in multi-partner hazard mitigation planning. Assistance in completing the template will be available in the form of a workshop for all planning partners or one-on-one visits with each partner, depending on funding availability. Any questions on completing the template should be directed to:

Rob Flaner
Tetra Tech, Inc.
90 South Blackwood Ave.
Eagle, ID 83616
(208) 939-4391
e-mail: rflaner@msn.com

Please provide both a hard copy and digital copy of the completed template to Tetra Tech upon completion.

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials **before** you begin the process of filling in the template:

- Summary-of-loss matrix for the hazard mitigation plan
- Results from the hazard mitigation plan questionnaire
- Catalog of mitigation alternatives
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM)

A Note About Software:

The template for the special-purpose district annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

CHAPTER NUMBER AND TITLE

In the chapter title at the top of Page 1, type in the complete official name of your jurisdiction (West County Fire Protection District #1, Burgville Flood Protection District, etc.). At this time, also change the name in the “header” box on Page 3, using the same wording.

Note that the template is set up as Chapter “X.” Please leave all references to “X” in the template as they are. Once all templates are received, chapter numbering will be assigned for incorporation into the final plan.

HAZARD MITIGATION PLAN POINT OF CONTACT

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

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

JURISDICTION PROFILE

Narrative Profile

Please provide a brief summary to profile your jurisdiction. Include the purpose of the jurisdiction, the date of inception, the type of organization, the number of employees, the mode of operation (i.e., how operations are funded), the type of governing body, and who has adoptive authority. Describe who the jurisdiction's customers are (if applicable, include number of users or subscribers). Include a geographical description of the service area.

Provide information in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document.

Example Jurisdiction Narrative Profile:

Humboldt Community Services District is a special-purpose district created in 1952 to provide water, sewer, and street lighting to the unincorporated area surrounding the City of Eureka known as Pine Hill & Cutten. The District's designated service areas expanded throughout the years to include other unincorporated areas of Humboldt County known as Myrtle town, Humboldt Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2007, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds..

Summary Information

Complete the bulleted list of summary information as follows:

- **Population Served**—List the estimated population that your jurisdiction provides services to. If you do not know this number directly, create an estimate (e.g., the number of service connections times the average household size for the service area based on Census data).
- **Land Area Served**—Enter the service area of your jurisdiction in acres or square miles.
- **Value of Area Served**—Enter the approximate assessed value of your service area. If you do not have this information, the County should be able to provide a number using the County Assessor's database.
- **Land Area Owned**—Enter the area of property owned by the jurisdiction in acres or square miles.
- **List of Critical Infrastructure/ Equipment Owned by the Jurisdiction**—List all infrastructure and equipment that is critical to your jurisdiction's operations and is located in a natural hazard risk zone. Briefly describe the item and give its estimated replacement-cost value. Examples are as follows:
 - Fire Districts—Apparatus and equipment housed in a facility that is located in a natural hazard risk zone. This is the equipment that is essential for you to deliver services to this area should a natural hazard occur. It is not necessary to provide a detailed inventory of each engine and truck and its contents. A summary will suffice, such as "5 Engines, 2 ladders, and their contents". Do not list reserve equipment.
 - Dike/Flood Control Districts—Miles of levees, pump stations, retention/detention ponds, tide gates, miles of ditches, etc., within natural hazard risk zones.
 - Water Districts—Total length of pipe (it is not necessary to specify size and type), pump stations, treatment facilities, dams and reservoirs, within natural hazard risk zones.

- Public Utility Districts—Miles of power line (above ground and underground), generators, power generating sub-stations, miles of pipeline, etc., within natural hazard risk zones.
- School Districts—Anything within natural hazard risk zones, besides school buildings, that is critical for you to operate (e.g., school buses if you own a fleet of school buses).
- **Total Value of Critical Infrastructure/Equipment**—Enter total replacement-cost value of the critical infrastructure and equipment listed above.
- **List of Critical Facilities Owned by the Jurisdiction**—List all buildings and other facilities that are critical to your jurisdiction’s operations and are located in a natural hazard risk zone. Briefly describe the facility and give its estimated replacement-cost value.
- **Total Value of Critical Facilities**— Enter total replacement-cost value of the critical facilities listed above.
- **Current and Anticipated Service Trends**— Enter a brief description on how your jurisdiction’s services are projected to expand in the foreseeable future and why. Note any identified capital improvements needed to meet the projected expansion. Examples are as follows:
 - For a Fire District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our District is experiencing an average annual increase in call volume of 13 percent.
 - For Dike/Drainage/Flood Control District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will result in an increase in impermeable surface within our service area and thus increase the demand on control facilities.
 - For a Water District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will represent an increase in the number of housing units within the service area and thus represent an expansion of the district’s delivery network.

Boundary Map

Maps that illustrate the service area boundary for all special-purpose district partners will be provided at the workshop. Please confirm that the boundaries reflected on the maps are current and accurate for your jurisdiction. In the box for this section, include a reference to the map that includes your jurisdiction’s boundaries.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In Table X-1, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the summary of natural hazard events within risk assessment of the overall hazard mitigation plan. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on your jurisdiction’s operations. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on operations was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

Impacts on People

To assess impacts on people, values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- High Impact—50% or more of the population is exposed to a hazard (Impact Factor = 3)
- Medium Impact—25% to 49% of the population is exposed to a hazard (Impact Factor = 2)
- Low Impact—25% or less of the population is exposed to the hazard (Impact Factor = 1)
- No impact—None of the population is exposed to a hazard (Impact Factor = 0)

Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *value of buildings, equipment and infrastructure that is exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to the jurisdiction’s exposed buildings, equipment and infrastructure , taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Jurisdiction- Owned Facilities Exposed to the Hazard

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- High Impact—50% or more of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 3)
- Medium Impact—25% to 49% of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 2)
- Low Impact—24% or less of the total assessed property value of facilities, equipment and infrastructure is exposed to the hazard (Impact Factor = 1)
- No impact—None of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 0)

TABLE 4. HAZARD IMPACT ON PROPERTY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Jurisdiction’s Operations

Impact on operations is assessed based on estimates of *how long it will take your jurisdiction to become 100-percent operable* after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. In Table 5, list the potential impact of each hazard on the operations of your jurisdiction, along with its impact factor, as follows:

- High = functional downtime of 365 days or more (Impact Factor = 3)
- Medium = Functional downtime of 180 to 364 days (Impact Factor = 2)
- Low = Functional downtime of 180 days or less (Impact Factor = 1)
- No Impact = No functional downtime is estimated from the hazard (Impact Factor = 0)

TABLE 5. HAZARD IMPACT ON OPERATIONS			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

You will need to consult the risk assessment for this task. The critical facilities exposed to each hazard have been identified, and the impacts on operability have been estimated for most of the hazards within the planning area. If the functional downtime component has not been provided for a hazard in the risk assessment, consider the impact on operability of that hazard to be low.

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and operations:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + operations}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Operations (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table X-2 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table X-2 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

APPLICABLE REGULATIONS AND PLAN

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements addressing hazard mitigation. Describe how these laws may support or conflict with the mitigation strategies of this plan. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction. Note whether the documents could have a positive or a negative impact on the mitigation strategies of this plan. “None applicable” is a possible answer for this section.

CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

Complete Table X-3 to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. For each program enter “Yes” or “No” in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter “N/A” in these columns if your jurisdiction is not participating.

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Complete Table X-4 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. These have been provided in the Steering Committee meeting minutes that were forwarded to you in the past.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Technical assistance will be available to your jurisdiction in completing this section during the technical assistance visit.

Prioritization of Mitigation Initiatives

Complete the information in Table X-5 as follows:

- Initiative #—Indicate the initiative number from Table X-4.
- # of Objectives Met—Enter the number of objectives the initiative will meet.
- Benefits—Enter “High,” “Medium” or “Low” as follows:
 - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
 - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
 - Low: Long-term benefits of the project are difficult to quantify in the short term.
- Costs—Enter “High,” “Medium” or “Low” as follows:
 - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- Do Benefits Exceed the Cost?—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- Is the Project Grant-Eligible?—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- Can Project Be Funded Under Existing Program Budgets?—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- Priority— Enter “High,” “Medium” or “Low” as follows:
 - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for

HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table X-6 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

CHAPTER X. [INSERT JURISDICTION NAME] ANNEX

X.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone #]
e-mail Address: [email address]

Alternate Point of Contact

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone #]
e-mail Address: [email address]

X.2 JURISDICTION PROFILE

[Insert Narrative Profile Information, per Instructions]

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

- **Population Served**—[Insert Population] as of [Insert Date of Population Count]
- **Land Area Served**—[Insert Area]
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is [Insert Total Value]
- **Land Area Owned**—[Insert Area]
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - [Insert Description of Item] [Insert Value of Item]
 - [Insert Description of Item] [Insert Value of Item]
 - [Insert Description of Item] [Insert Value of Item]
 - [Insert Description of Item] [Insert Value of Item]
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is [Insert Total Value]
- **List of Critical Facilities Owned by the Jurisdiction:**
 - [Insert Description of Item] [Insert Value of Item]
 - [Insert Description of Item] [Insert Value of Item]
 - [Insert Description of Item] [Insert Value of Item]
 - [Insert Description of Item] [Insert Value of Item]
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is [Insert Total Value]
- **Current and Anticipated Service Trends**—[Insert Summary Description of Service Trends]

The jurisdiction's boundaries are shown on Figure [Insert # of Figure Showing Jurisdiction Boundaries]

X.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table X-1 lists all past occurrences of natural hazards within the jurisdiction.

X.4 HAZARD RISK RANKING

Table X-2 presents the ranking of the hazards of concern.

X.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]

X.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

The jurisdiction's classifications under various hazard mitigation programs are presented in Table X-3.

X.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table X-4 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table X-5 identifies the priority for each initiative. Table X-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

X.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

[Insert text, if any]

X.9 ADDITIONAL COMMENTS

[Insert text, if any]

TABLE X-3. COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Public Protection			
Storm Ready			
Firewise			
Tsunami Ready			

TABLE X-4. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						

