Grant County

HAZARD MITIGATION PLAN UPDATE
VOLUME 2: PLANNING PARTNER ANNEXES

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Grant County Emergency Management
3953 Airway Drive NE Building #2
Moses Lake, WA 98837

Grant County
Hazard Mitigation Plan Update;
Volume 2—Planning Partner Annexes

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PART 1 — INTRODUCTION

CHAPTER1. PLANNING PARTNER PARTICIPATION

1.1. BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages 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 Grant County Hazard Mitigation Plan Update, 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 Grant 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 (cities and the County)
- Special purpose districts.

1.2. THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

The planning team solicited the participation of the County and all County-recognized special purpose districts at the outset of this project. A kick off meeting was held on March 31, 2011 at the Moses Lake Fire Station to identify potential stakeholders for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort and to solicit planning partners. All eligible local governments within the planning area were invited to attend. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Provide an update on the planning grant.
- Outline the Grant County plan update work plan.
- Describe the benefits of multi-jurisdictional planning.
- Solicit planning partners.

- Confirm a Steering Committee.

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.

Maps for each participating city are provided in the individual annex for that city. These maps will be updated periodically as changes to the partnership occur, either through linkage or by a partner dropping out due to a failure to participate.

Planning Partner Expectations

The planning team developed the following list of planning partner expectations:

- Each partner will provide a "Letter of Intent to Participate."
- Each partner will support and participate in the selection and function of the Steering Committee overseeing the development of the update. Support includes allowing this body to make decisions regarding plan development and scope on behalf of the partnership.
- Each partner will provide support for the public involvement strategy developed by the Steering Committee in the form of mailing lists, possible meeting space, and media outreach such as newsletters, newspapers or direct-mailed brochures.
- Each partner will participate in plan update development activities such as:
  - Steering Committee meetings
  - Public meetings or open houses
  - Workshops and planning partner training sessions
  - Public review and comment periods prior to adoption.

  Attendance will be tracked at such activities, and attendance records will be used to track and document participation for each planning partner. No minimum level of participation will be established, but each planning partner should attempt to attend all such activities.
- Each partner will be expected to perform a "consistency review" of all technical studies, plans, and ordinances specific to hazards identified within the planning area to determine the existence of plans, studies or ordinances not consistent with the equivalent documents reviewed in preparation of the County plan. For example: if a planning partner 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 the partner's area.
- Each partner will be expected to review the risk assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide jurisdiction-specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.
- Each partner will be expected to review the mitigation recommendations chosen for the overall county and determine if they will meet the needs of its jurisdiction. Projects within each jurisdiction consistent with the overall plan recommendations

will need to be identified, prioritized and reviewed to determine their benefits and costs.

- 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.
- Each partner will be required to sponsor at least one public meeting to present the draft plan at least two weeks prior to adoption.
- Each partner will be required to formally adopt the plan.

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

Linkage Procedures

Eligible local jurisdictions that did not participate in development of this hazard mitigation plan update may comply with DMA requirements by linking to this plan following the procedures outlined in Appendix B.

1.3. ANNEX-PREPARATION PROCESS

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, D and E to this volume of the Hazard Mitigation Plan Update.

Workshop

Workshops were held either in a face to face meeting format or via conference call for Planning Partners to learn about the templates and the overall planning process. Topics included the following:

- DMA
- Grant County plan background
- The templates
- Risk ranking
- Developing your action plan
- Cost/benefit review.

Separate sessions were held for special purpose districts and municipalities, in order to better address each type of partner's needs. The sessions provided technical assistance and an

overview of the template completion process. Attendance at these sessions were mandatory under the planning partner expectations established by the Steering Committee, some of the sessions occurred in an electronic format for simplified planning.

In the risk-ranking exercise, each planning partner was asked to rank each risk specifically for its jurisdiction, based on the impact on its population or facilities. Cities were asked to base this ranking on probability of occurrence and the potential impact on people, property and the economy. Special purpose districts were asked to base this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities and the facilities' functionality after an event. The methodology followed that used for the county-wide risk ranking presented in Volume 1. A principal objective of this exercise was to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes. Tools utilized included the following:

- The risk assessment results developed for this plan
- Hazard maps for all hazards of concern
- Special district boundary maps that illustrated the sphere of influence for each special purpose district partner
- Hazard mitigation catalogs
- Federal funding and technical assistance catalogs
- Copies of partners' prior annexes, if applicable.

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.

Benefit/Cost Review

44CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. For mitigation actions carried over from the previous plan, cost/benefit ratios

were used. These ratios will stay the same. This plan update does not replace the previous mitigation plan or its initiatives unless otherwise indicated within the jurisdictional annexes. Within the plan update, because new 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.

Mitigation Action Types

The following is a summary of the types of mitigation actions within this plan update:

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 storm water 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.

1.4. COMPATIBILITY WITH PREVIOUS REGIONAL HAZARD PLAN

This plan update does not replace mitigation initiatives identified in the previous mitigation plan (2006 plan) unless otherwise noted in the jurisdictional annexes. Grant County was divided into "regions" in the previous plan. It was not necessary to utilize a regional format in the plan update process since many planning partners are already familiar with hazard mitigation.

1.5. FINAL COVERAGE UNDER THE PLAN

Currently, seven partners fully meet the participation requirements and seek DMA compliance under this plan update. Upon plan update approval and adoption these jurisdictions become eligible to apply for mitigation project funds. Remaining jurisdictions may follow the linkage procedures in Appendix B of this volume.

TABLE 0-1.
PLANNING PARTNER STATUS

Jurisdiction	Letter of Intent Date	Attended Workshop?	Completed Template?	Will Be Covered by This Plan?
Grant County	4/2011	Yes	Yes	Yes
City of Ephrata	3/2011	Yes	Yes	Yes
City of Moses Lake	4/2011	Yes	Yes	Yes
City of Warden	3/2011, revised 4/2013	Yes	Yes	Yes
Fire Protection District #3	4/2011	Yes	Yes	Yes
Fire Protection District #10	5/2011	Yes	Yes	Yes
Fire Protection District #12	4/2013	Yes	Yes	Yes

PART 2 —
ANNEXES FOR MUNICIPALITIES

CHAPTER 2. UNINCORPORATED GRANT COUNTY ANNEX

2.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Grant County Department of Emergency Management
3953 Airway Dr. NE Bldg. #2
Moses Lake, WA 98837
Telephone: 509-762-1462
e-mail: gcem@co.grant.wa.us

Alternate Point of Contact
Grant County
35 C St. NW
PO Box 37
Ephrata WA 98823
Telephone: 509-754-2011

2.2 JURISDICTION PROFILE

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

Founded — February 24, 1909

Current Population—91,000 (2012 estimate)

Population Growth— Knowledge of the composition of the population and how it has changed in the past and how it may change in the future is needed for making informed decisions about the future. Information about population is a critical part of planning because it directly relates to land needs such as housing, industry, stores, public facilities and services, and transportation. Grant County is the 13th largest of Washington's 39 counties. The U.S. Census estimated Grant County's population at 89,120 as of 2010. The County's largest city is Moses Lake, with an estimated 2009 population of 18,930. Ephrata, the county seat is the second most populated city with over 7,100 residents. According to the Office of Financial Management population estimates, over 47 percent of County residents live in unincorporated areas.

Location and Description— Grant County is a rural county with a geographic area of 2,679 square miles, ranking 4th in size among Washington's 39 counties.

Brief History— Settlers first came to Grant County in the mid to late 1800's with plans of raising livestock, but the area was somewhat desolate. The county was officially created by Washington State Legislature in 1909, named after Ulysses S. Grant. The plans of raising livestock transitioned to dryland farming but irrigation would provide a wide range of benefits to the people. The creation of Grand Coulee Dam was approved in 1933. The Grand Coulee Dam is the cornerstone of the Columbia Basin Project, a multi-purpose project which now irrigates over 500,000 acres. Other benefits of the Columbia Basin Project are the electricity generated and waterways that provide miles of recreational activities within the area (Wikipedia, 2013).

Climate— Most of the air masses and weather systems crossing eastern Washington are traveling under the influence of the prevailing westerly winds. In the summer season, air from over the continent results in low relative humidity and high temperatures. In the winter,

cold weather prevails. Extremes in temperature in both summer and winter occur when the inland basin is under the influence of air from over the continent. During most of the year, prevailing wind is from the west or southwest. Northeasterly winds are more frequent in fall and winter. Extreme wind velocities can be expected to reach 50 mph at least once in two years; 60 to 70 mph once in 50 years and 80 mph once in 100 years. (Grant County Hazard Mitigation Plan, 2006).

The Columbia Basin is a semi-arid region with four distinct seasons. The land receives 8 to 11 inches of precipitation annually in the western and southern part, with about 1.0 to 1.5 inches of precipitation June through August. In winter, the maritime influence is strong due to prevailing westerly winds from the Pacific Ocean. Summer days are typically hot and dry. Extreme temperatures commonly exceed 100° F and reaching below 0° F in winter. (Grant County Comprehensive Plan, 2006).

Governing Body Format— Grant County is governed by a board of three elected officials, serving a 4 year term.

Development Trends— The County and its cities have adopted comprehensive plans that govern land use decisions and policy making in their jurisdictions. Decisions on land use will be governed by these programs. This plan will work together with these programs to support wise land use in the future by providing vital information on the risks associated with natural hazards in Grant County.

Grant County has not experienced any significant change in development in hazard prone areas over the last several years. Any development in a flood hazard area has been limited to single existing lot development and requires compliance with the County's flood damage prevention and critical areas ordinances, otherwise the construction is not allowed. The areas of unincorporated Grant County that classify as flood hazard areas are not exceptionally suitable to development given the fact that these areas typically follow steep-banked ravines or drainages that render the areas impractical for development. Some of these areas are under State or Federal ownership and thus not susceptible to development pressure. Grant County Code 24.16 "Flood Damage Prevention" establishes the County Planning Department's responsibility to ensure that proposed development complies with these standards. Each building permit and land use entitlement application is reviewed for flood zone or flood way issues using the FEMA FIRMs and where an issue is present, the applicant must resolve the flood issues prior to issuance of the permit. As required by the Growth Management Act, the County must keep its development regulations updated as necessary to comply with State law. The County works closes with the Washington State Department of Ecology to maintain the Grant County Code 24.16 to ensure it is current. An additional measure of protection coming in 2014 is the updated Shoreline Master Program, which will include additional flood prevention measures above and beyond Grant County Code 24.16. Grant County will maintain these activities and continue its compliance with the National Flood Insurance Program.

Building Code used in Grant County is based on the International Building Code (IBC) standards. New structures are built to seismic hazard standards which may include seismic hold-downs on the structure or shear panels to provide protection from ground movement. In order to be in compliance, all new construction must be built to code. The Building Department inspects upgrades to existing structures and new constructions for compliance. Sub-areas among the Building Code are Fire Code, Plumbing Code, Mechanical Code, and Residential Code.

All municipal planning partners will incorporate by reference the Grant County Hazard Mitigation Plan Update in their comprehensive plans. This will assure that all future trends in development can be established with the benefits of the information on risk and vulnerability to natural hazards identified in this plan.

2.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 2-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 2-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957
Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

2.4 HAZARD RISK RANKING

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

TABLE 0-2.
HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Storm	42
2	Drought	36
3	Wildfire	33
4	Volcano	32
5	Flood	18
6	Earthquake	14
7	Dam Failure	12
8	Landslide	6
	Technological Hazard Type	*Reserved for subsequent plan update*

TABLE 0-2.
HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		

2.5 CAPABILITY ASSESSMENT

TABLE 2-3.
CAPABILITY ASSESSMENT

LEGAL AND REGULATORY CAPABILITY

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Y	Y	N	Y	2009 International Building Code
Zoning Code	Y	N	N	Y	Titles 23, 24, 25 of Grant County Code
Subdivisions	Y	N	N	Y	Title 22 of Grant County Code
Post Disaster Recovery	Y	Y	Y	Y	
Real Estate Disclosure				1.1.1.1.1	
Growth Management	Y	N	N	Y	Grant County Comprehensive Plan (post GMA) originally adopted in 1999, subsequent mandatory update completed in 2006.
Site Plan Review	Y	N	N	N	Embedded in Zoning Code
Special Purpose (flood management, critical areas)	Y	N	N	Y	Generally embedded in Zoning Code, however, GCC 24.08 and 24.16 deal with these issues specifically.
Planning Documents					
General Plan	Y	N	N	Y	See “Growth Management” above
Floodplain or Basin Plan	Y	Y	Y	Y	FEMA flood mapping, participates NFIP
Storm water Plan					
Capital Improvement Plan	Y	N	N	Y	Embedded in Comprehensive Plan
Habitat Conservation Plan					
Economic Development Plan	Y	N	N	Y	Embedded in Comprehensive Plan

TABLE 2-3.
CAPABILITY ASSESSMENT

LEGAL AND REGULATORY CAPABILITY

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Emergency Response Plan	Y	N	Y	Y	Comprehensive Emergency Management Plan
Shoreline Management Plan	Y	N	N	Y	Current version circa 1975; State mandated update currently taking place with hopeful adoption of winter 2013.
Post Disaster Recovery Plan	n/a				

ADMINISTRATIVE AND TECHNICAL CAPABILITY

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Planning/Department/Planning Director/Staff
Engineers or professionals trained in building or infrastructure construction practices	Y	Planning Director
Planners or engineers with an understanding of natural hazards	Y	Planning Director
Staff with training in benefit/cost analysis	Y	Treasurer Director/Staff
Floodplain manager	Y	Planning Department/GIS Coordinator and Associate Planner
Surveyors	Y	Public Works
Personnel skilled or trained in GIS applications	Y	Planning Department/GIS Coordinator and Associate Planner
Scientist familiar with natural hazards in local area	Y	Through Bureau of Reclamation
Emergency manager	Y	Emergency Management Director/Staff
Grant writers	Y	Various Departments and positions

FISCAL CAPABILITY

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Y
Capital Improvements Project Funding	Y
Authority to Levy Taxes for Specific Purposes	Y

TABLE 2-3.
CAPABILITY ASSESSMENT

LEGAL AND REGULATORY CAPABILITY

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
User Fees for Water, Sewer, Gas or Electric Service				Y	
Incur Debt through General Obligation Bonds				Y	
Incur Debt through Special Tax Bonds				Y	
Incur Debt through Private Activity Bonds				Y	
Withhold Public Expenditures in Hazard-Prone Areas				Y	
State Sponsored Grant Programs				Y	
Development Impact Fees for Homebuyers or Developers				Ineligible under current code configuration, eligible with series of code amendments	

COMMUNITY CLASSIFICATION SYSTEMS

	Participating?	Classification	Date Classified
Storm Ready	N		
Firewise	N		

2.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 2-4 lists the initiatives and their priority levels that comprise the jurisdiction's hazard mitigation plan.

2.7 STATUS OF PREVIOUS PLAN INITIATIVES

Table 2-4 summarizes the current status of initiatives that were adopted by the County for the previous hazard plan. Those that are directly carried over as actions in this hazard plan are also indicated as such in Table 2-4.

2.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Grant County Department of Emergency Management plans to evaluate technological hazards within the next plan update cycle and incorporate the new information acquired into this plan. Municipalities and special purpose districts may need support with the process.

2.9 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for Grant County are included in Volume 1 of this mitigation plan within the hazard profiles. These maps are based on the best available data at

the time of the preparation of this plan, and are considered to be adequate for planning purposes.

TABLE 0-4.
HAZARD MITIGATION ACTION PLAN MATRIX

Initiative #GCP-MH1—Grant County Planning Department							
Description / Department Responsible	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Protect aquifers through proper hazardous waste management and disposal / Grant County Planning Department	Drought, Hazardous Materials	Medium (Priority 1 of 1)	10.71:1	$150,000	Unknown	2013-2018	Yes
Initiative:	Increase general awareness of hazardous waste to the public, training for landfill operators, general education about the proper disposal of hazardous waste by businesses and agriculture.						
Mitigation Type:	Public Education and Awareness						
Rationale:	Failure to protect water resources makes communities in the planning area more vulnerable to droughts. Water resources must be protected from harmful chemicals. Our urban and agricultural communities are dependent on wells that tap into the generous aquifers for both drinking water and water for crops and orchards.						
Plan Goal(s):	Goal #4 public awareness, participation, and education						
Plan Objectives	Objective #10 encourage least adverse effect on the natural environment						
Status Update:	Identified goals and objectives revised to align with plan update.						
Initiative #GCPW-MH1—Grant County Public Works Department							
Description / Department Responsible	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Saddle Mountain Road Project / Grant County Public Works Department	Severe Storms, Earthquake	Medium (Priority 1 of 1)	3.85:1	$15,500,000	Federal Highway Administration Funds, State and local transportation funds	2013-2018	Yes
Initiative:	Plan and build additional access road over the Saddle Mountains in Southwest Grant County.						
Mitigation Type:	Structural Project						
Rationale:	Only one state highway (SR243) and no county roads connect the area just north of the Hanford Nuclear Reservation. An additional road would connect this isolated part of county to other transportation infrastructure.						
Goals:	Goal #1, Protect life, property, environment; Goal #2, Public mitigation, preparedness, and response						
Objectives	Objective #8, Retrofit, purchase, or relocate structures in high hazard areas						
Status Update:	Identified goals and objectives revised to align with plan update						
Initiative #GCSO-MH1-Grant County Sheriff's Office							

Description / Department Responsible	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Radio Improvements / Grant County Sheriff's Office	Severe Storms	1 of 1	4:1	$7,360,000 (2006 estimate)	Local Funds	complete	Yes, modified
Initiative:	Strengthening existing structures to ensure interoperable communications.						
Mitigation Type:	Emergency Response						
Rationale:	Interoperable communications for first responder safety						
Goals:	Goal #1 Protect life, property and the environment. Goal #2 Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters.						
Objectives:	Objective #1 Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #9 Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.						
Status Update:	Local funding was used for construction of 13 communications sites built to public safety standards and strengthening existing sites . Additional sites were engineered for loading, and local winds. Backup power, HVAC units, and site grounding requirements were addressed. A loop microwave was installed connecting all of the communications sites together. This project was completed in coordination with the Multi-Agency Communications Center, the Grant County Sheriff's Office and other first response agencies.						
Initiative #GCEM-MH1-Grant County Emergency Management							
Description / Department Responsible	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Encourage and support regional LEPCs in Grant County / Grant County Department of Emergency Management	All Hazards	Medium 1 of 4	307:1	$100,000	Grant funds, local funds	2013-2023	Yes, modified
Initiative:	Encourage and support Local Emergency Planning Committees (LEPC) regionally in Grant County.						
Mitigation Type:	Prevention and Public Education and Awareness						
Rationale:	Currently there are four functioning Local Emergency Planning Committees (LEPC) within in Grant County. They are Moses Lake, Quincy, Ephrata, and Warden. The county is comprised of several smaller jurisdictions that commonly work together, and would work intensely together in a hazard event. It is advantageous to encourage continual preparedness, mitigation, response, and recovery planning efforts through LEPCs. Further LEPCs bring special purpose districts, other taxing entities, employers, industry, the public, and others. They are a natural multi-disciplinary planning group that could work on neighborhood hazard issues.						

Goals:	Goal #2, Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters Goal #3, Establish a hazard and disaster resilient economy
Objectives:	Objective #7, Utilize the best available data, science, technology Utilize the best available data, science and technologies to improve understanding of the location and potential impacts of natural hazards, the vulnerability of building types, and community development patterns and the measures needed to protect life safety. Objective #9, Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.
Status Update:	Identified goals and objectives revised to align with plan update. Cost revised to reflect current need. Initiative number carried over, benefit-cost ratio modified.

Initiative #GCEM-MH3-Grant County Emergency Management

Description / Department Responsible	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Public education for hazard awareness / Grant County Department of Emergency Management	All Hazards	Medium 2 of 4	571:1	$60,000		2013-2023	Yes, modified

Initiative:	Incorporate hazard awareness information into the Grant County Emergency Management public education program through public outreach events (preparedness fairs and planning materials such as emergency calendars and planning guides.
Mitigation Type:	Public Education and Awareness
Rationale:	The more knowledge that residents have about local hazards, the more likely they are to take action to safeguard themselves and their property from hazards.
Goals:	Goal #2, Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters, Goal #4, Promote public awareness, engage public participation and enhance partnerships through education and outreach
Objectives:	Objective #6, Educate the public on the risk exposure to hazards and ways to increase the public's capability to prepare, respond, recover and mitigate the impacts of these events.
Status Update:	Identified goals and objectives revised to align with plan update. Initiative number carried over, benefit-cost ratio modified.

Initiative #GCEM-MH4-Grant County Emergency Management

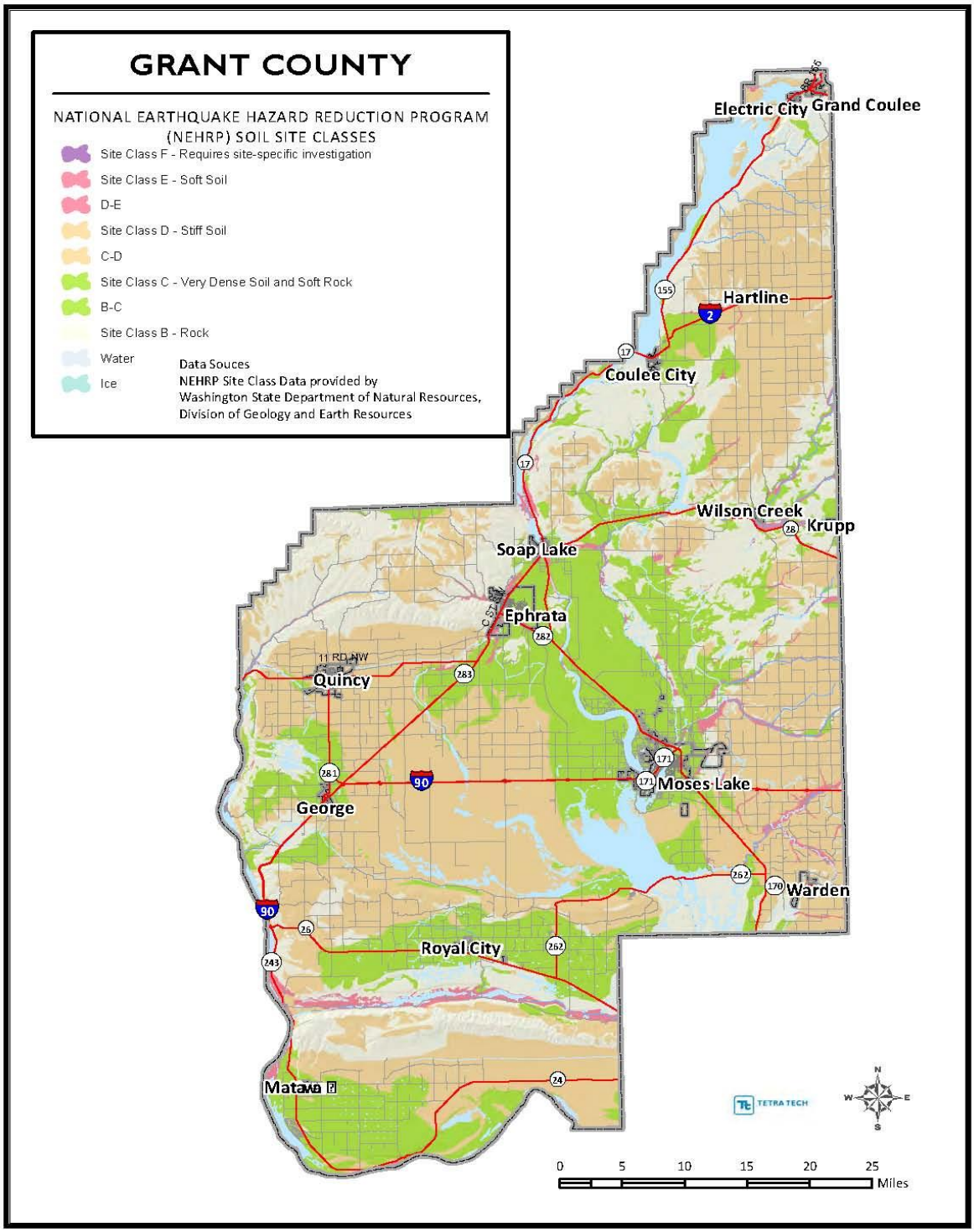
Description / Department Responsible	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Encourage land use planning that considers hazardous materials / Grant County Department of Emergency Management	All Hazards	Medium 3 of 4	High Medium	$25,000	Grant funds, local funds	2013-2018	Yes, modified

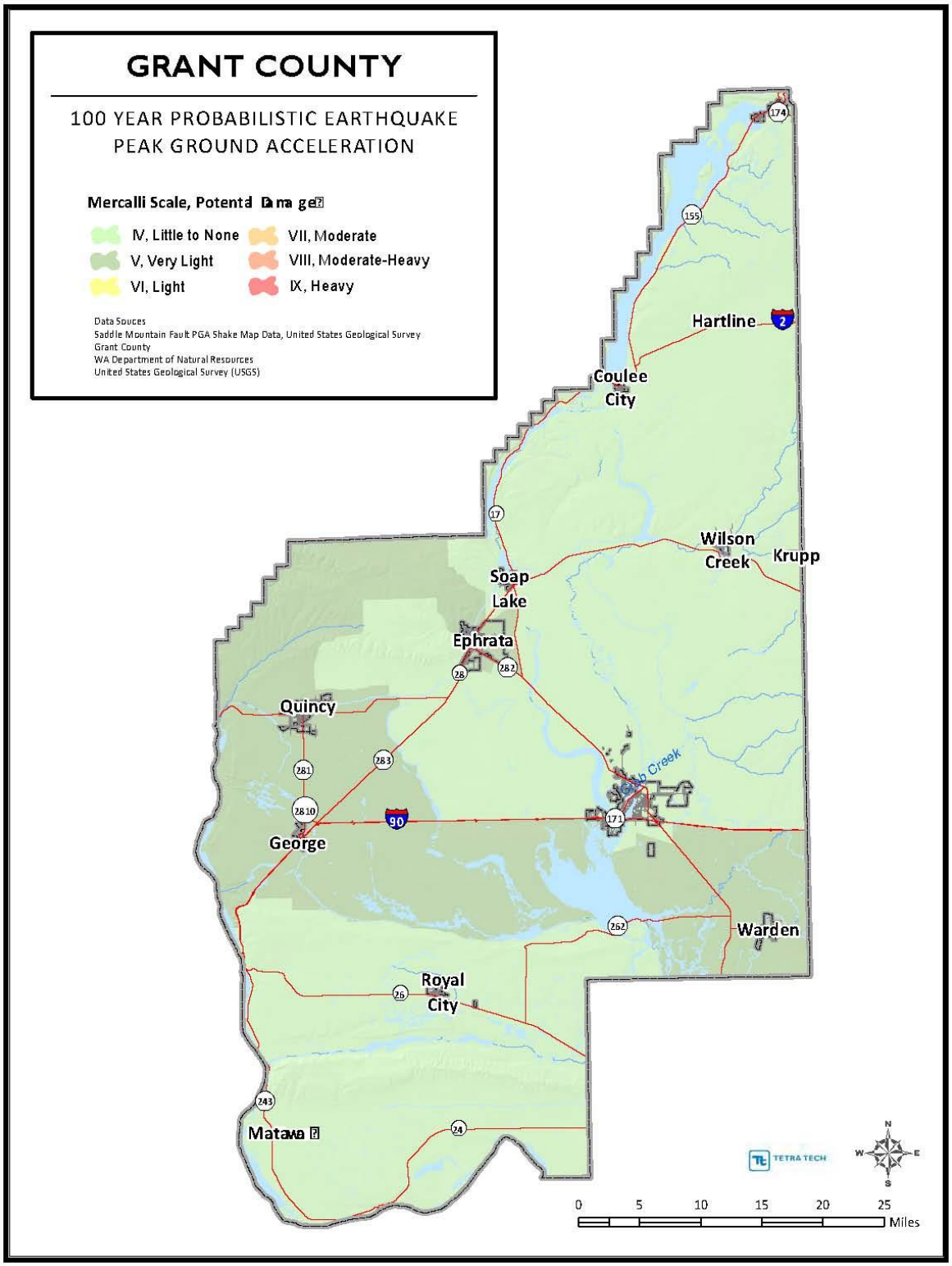
Initiative:	Encourage land use planning county-wide that considers hazardous materials and encourage hazard awareness to protect the public, government, industries and employers from the impacts of hazardous materials incidences.
Mitigation Type:	Prevention
Rationale:	As industries continue to move to the area, there is a need to reduce the risks from hazardous materials incidences. There are several locations in the county where industry is located within proximity to neighborhoods and schools. Buffer zone areas should be identified for effective prevention.
Goals:	Goal #1, Protect life, property and the environment
Objectives:	Objective #3, Prevent or discourage new development in hazardous areas or ensure that if building occurs in high-risk areas it is done in such a way as to minimize risk. Objective #4, Integrate hazard mitigation policies into land use plans within the planning area.
Status Update:	Identified goals and objectives revised to align with plan update. The scope of this initiative now includes not only the Wheeler Corridor industrial zone, but considers the entire county. Initiative number carried over, benefit-cost ratio modified.

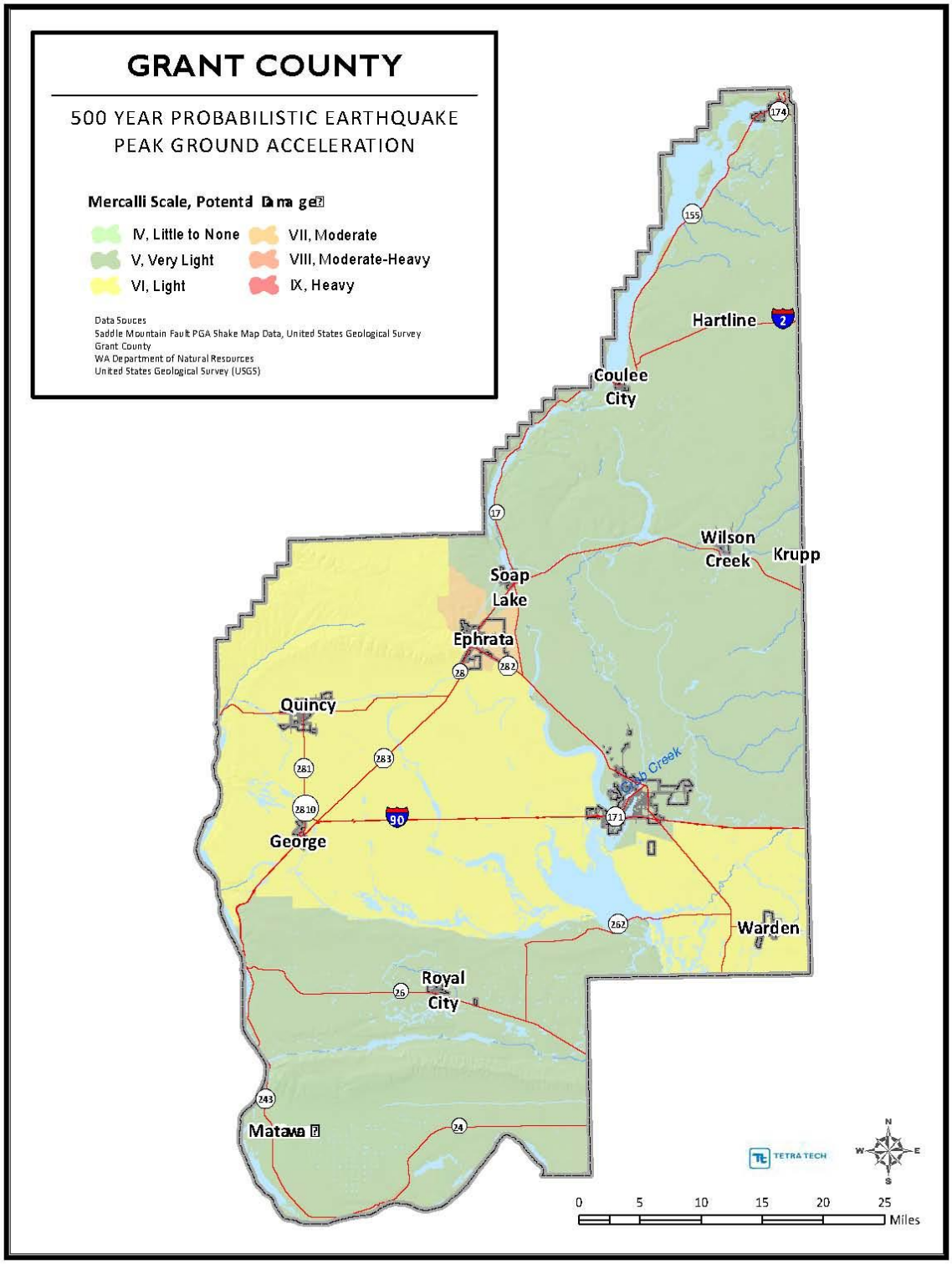
Initiative #GCEM-MH2-Grant County Emergency Management

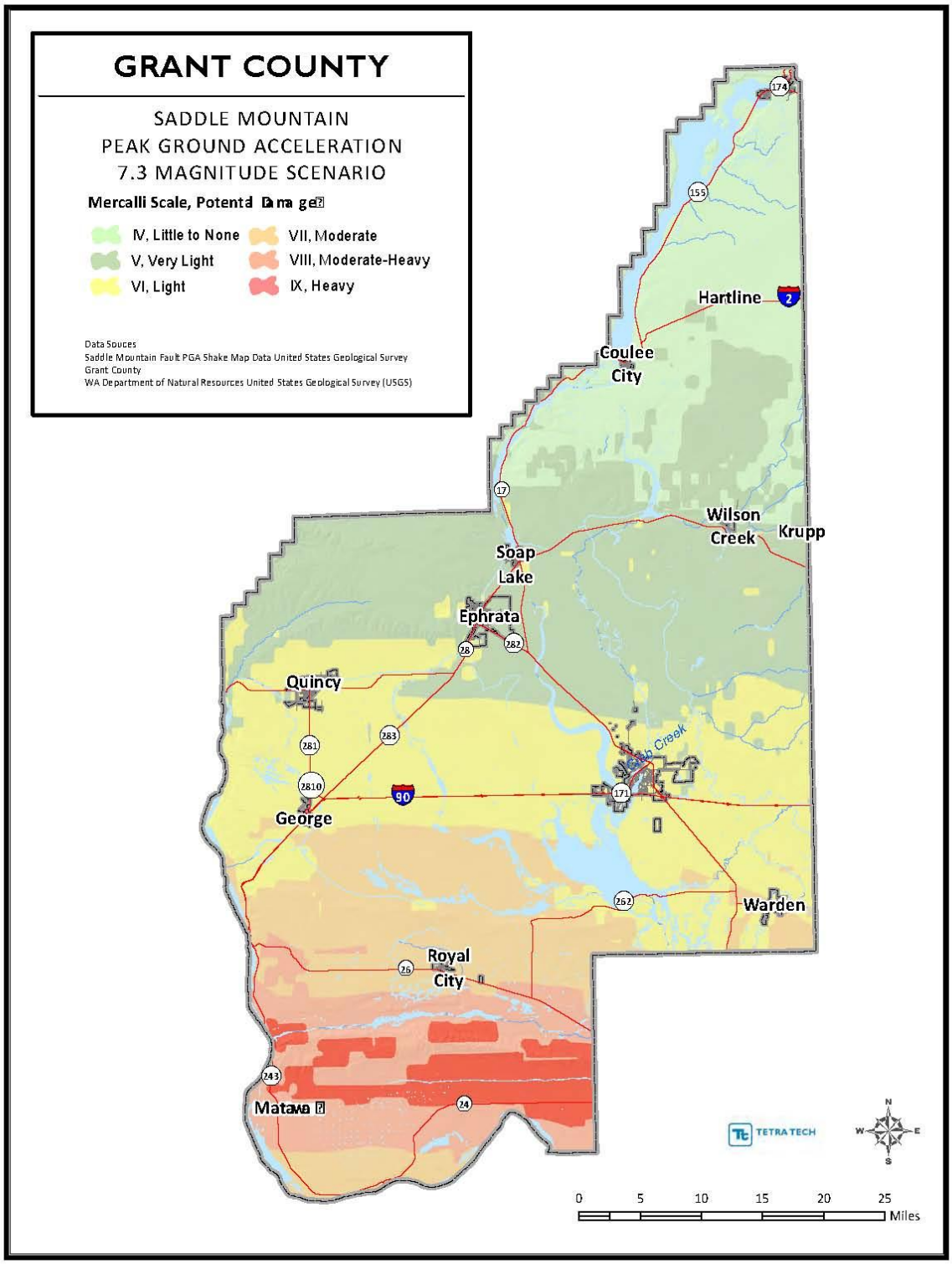
Description / Department Responsible	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Improve and maintain emergency worker volunteer program / Grant County Department of Emergency Management	All Hazards	Medium 4 of 4	571:1	No cost	n/a	2013-2018	Yes, modified

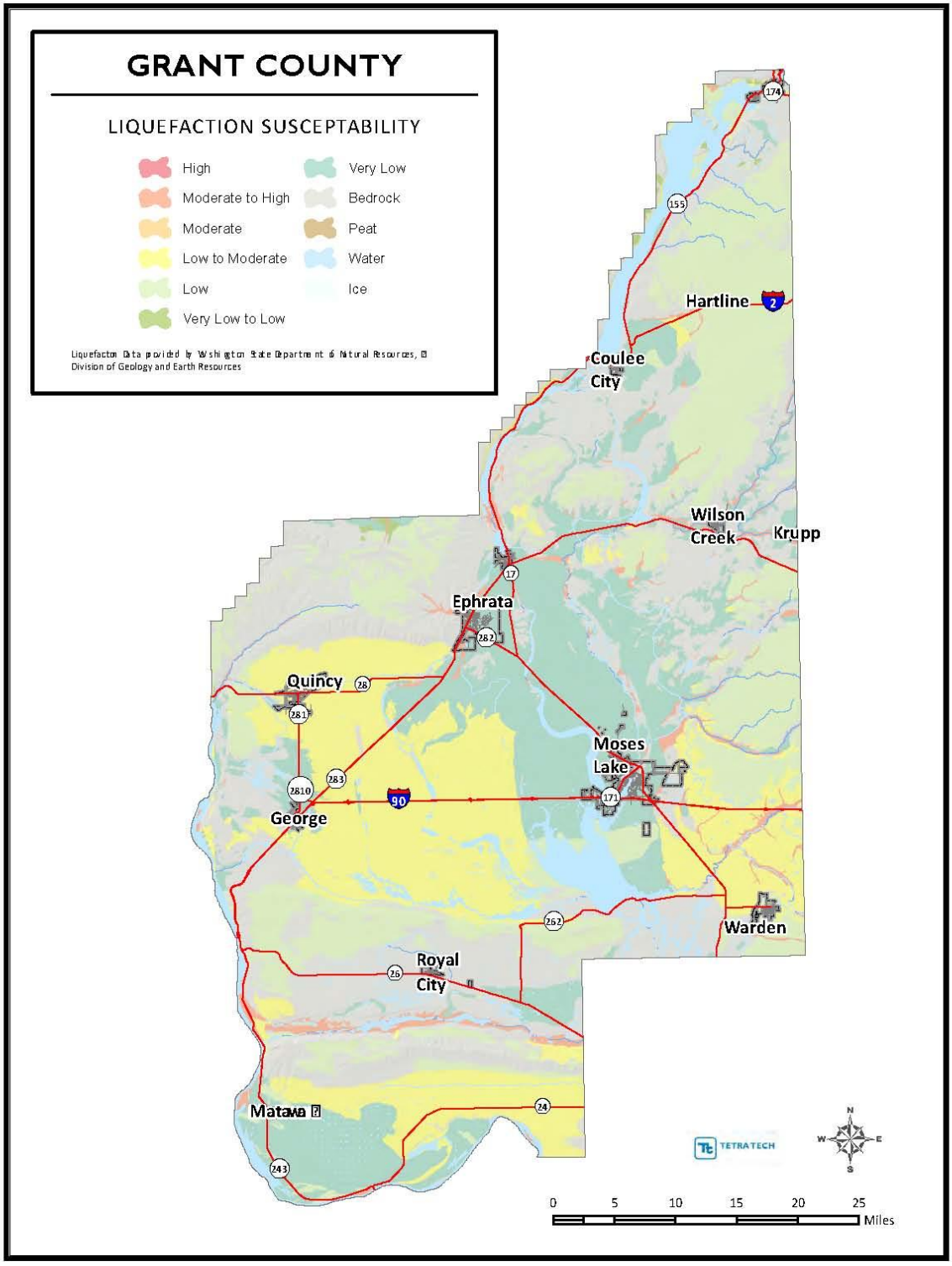
Initiative:	Improve and maintain support and participation in the emergency worker volunteer program.
Mitigation Type:	Public Education and Awareness
Rationale:	Training emergency worker volunteers in shelter management with the American Red Cross reduces the impact of emergencies and disasters on the public. Trained volunteers promote a safe environment for the public.
Goals:	Goal #1, Protect life, property, and the environment
Objectives:	Objective #1, Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area.
Status Update:	Identified goals and objectives revised to align with plan update. Community Emergency Response Team (CERT) planning was removed from this initiative due to no staffing to support this resource. Initiative number carried over, benefit-cost ratio modified.

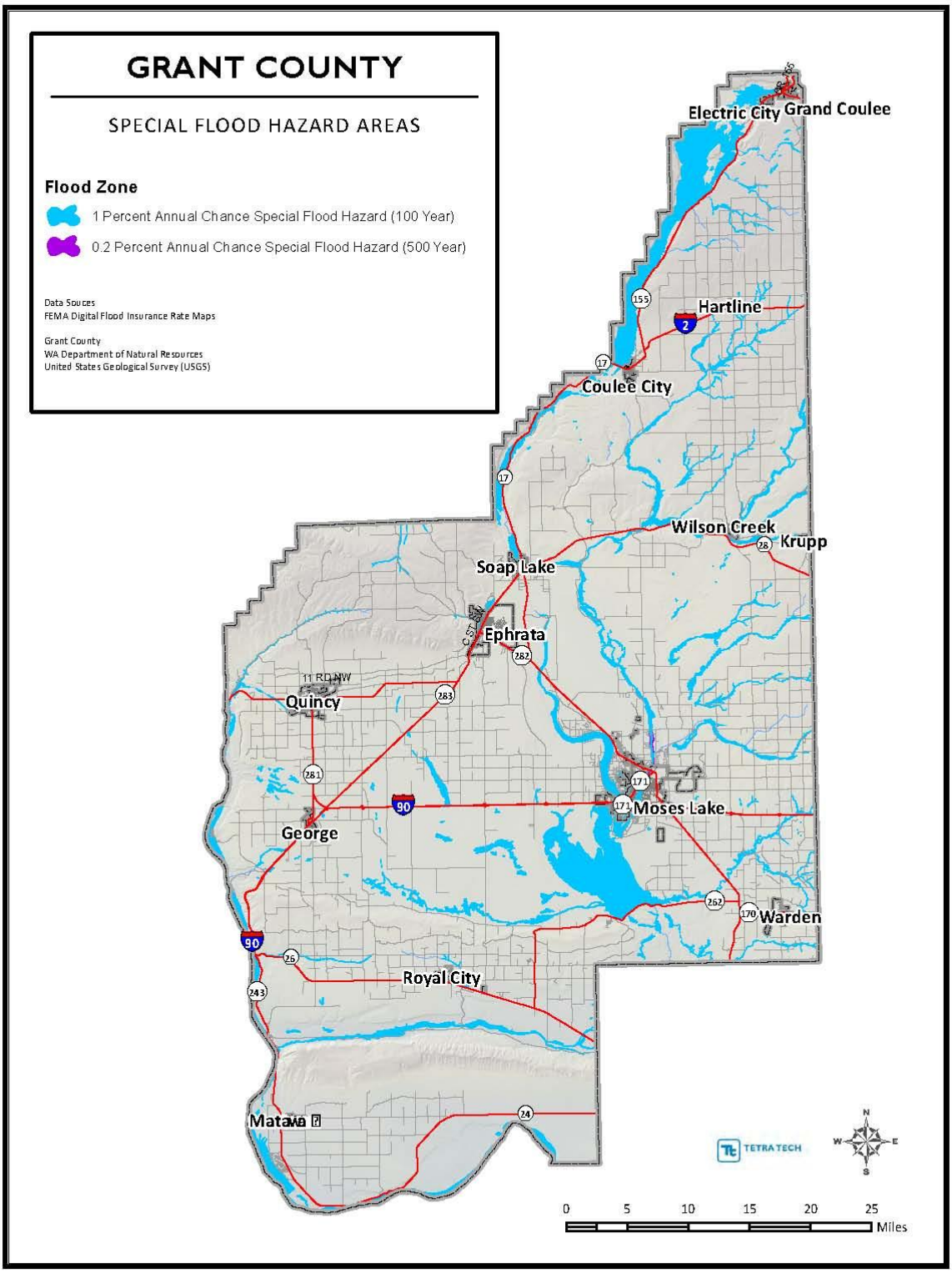

GRANT COUNTY
NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM
(NEHRP) SOIL SITE CLASSES
Site Class F - Requires site-specific investigation
Site Class E - Soft Soil
D-E
Site Class D - Stiff Soil
C-D
Site Class C - Very Dense Soil and Soft Rock
B-C
Site Class B - Rock
Water
Ice
Data Souces
NEHRP Site Class Data provided by
Washington State Department of Natural Resources,
Division of Geology and Earth Resources
Electric City
Grand Coulee
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Moses Lake
Warden
Royal City
Mattawa
TETRA TECH
0 5 10 15 20 25
Miles

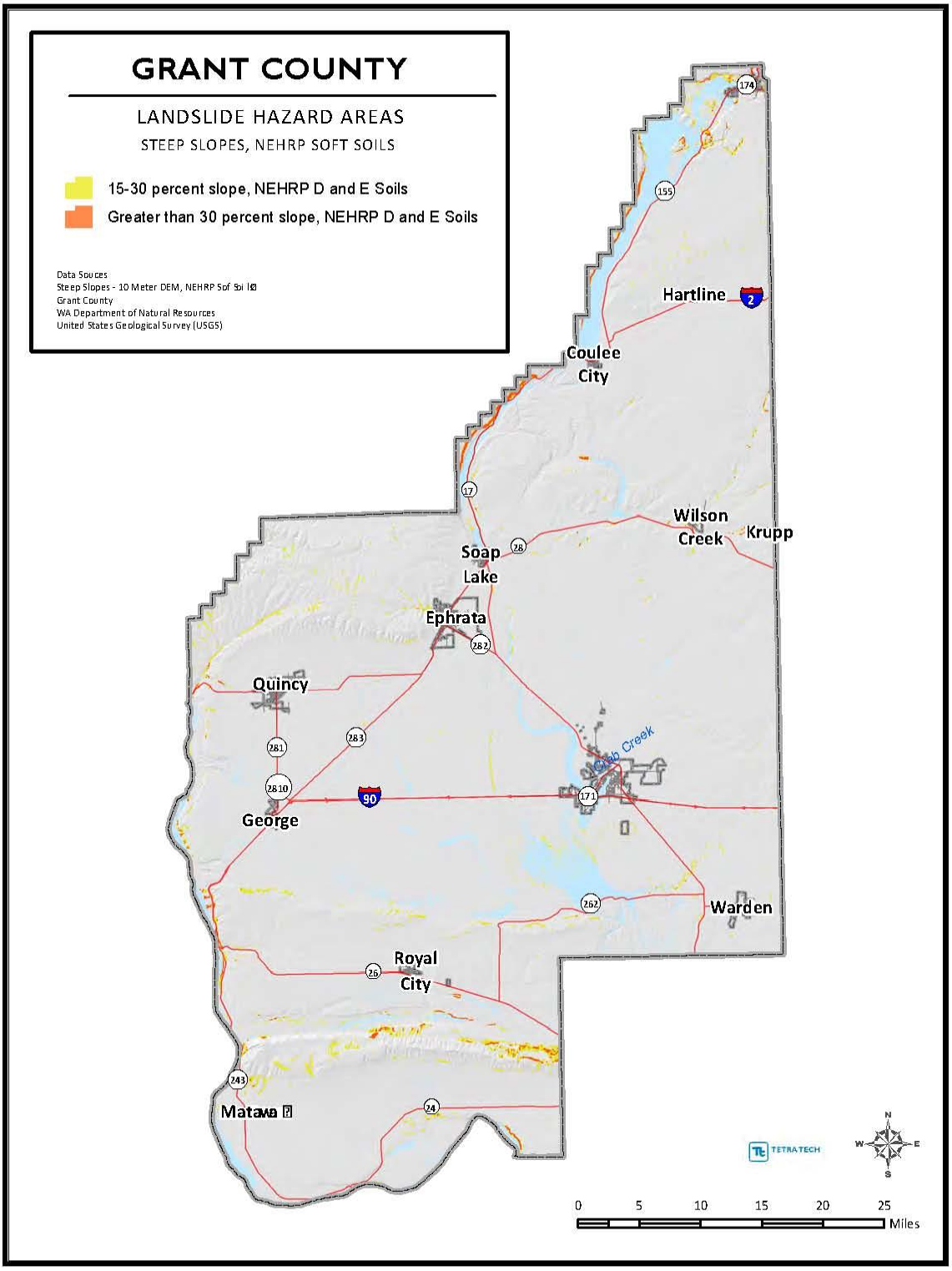

GRANT COUNTY
100 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data, United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Warden
Royal City
Matawa
Crab Creek
TETRA TECH
0 5 10 15 20 25
Miles

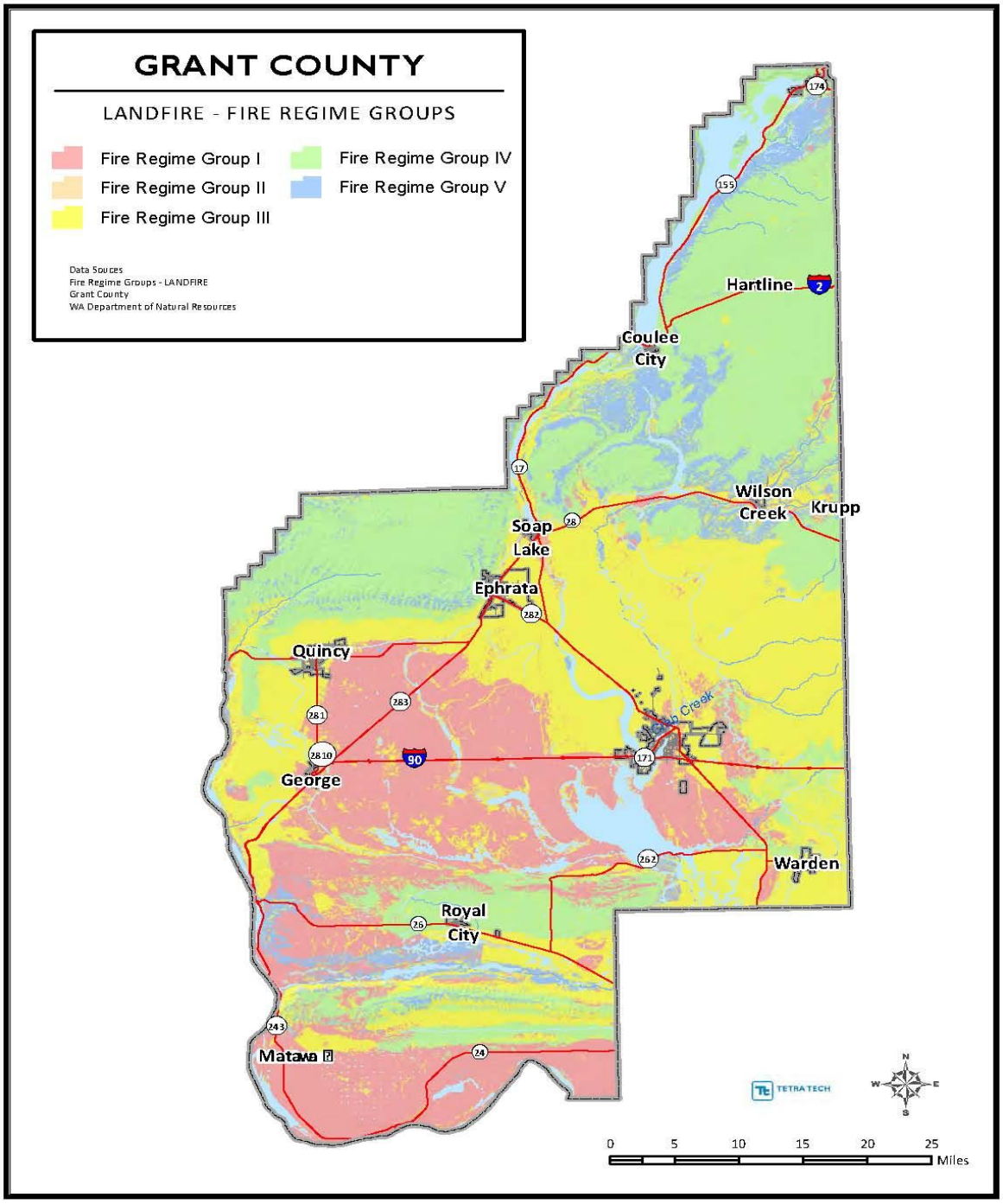

GRANT COUNTY
500 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data, United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Warden
Royal City
Matawa
Crab Creek
TETRA TECH
0 5 10 15 20 25
Miles


GRANT COUNTY
SADDLE MOUNTAIN
PEAK GROUND ACCELERATION
7.3 MAGNITUDE SCENARIO
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data United States Geological Survey
Grant County
WA Department of Natural Resources United States Geological Survey (USGS)
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Warden
Royal City
Matawa
TETRA TECH
0 5 10 15 20 25
Miles


GRANT COUNTY
LIQUEFACTION SUSCEPTABILITY
High
Moderate to High
Moderate
Low to Moderate
Low
Very Low to Low
Very Low
Bedrock
Peat
Water
Ice
Liquefaction Data provided by Washington State Department of Natural Resources, Division of Geology and Earth Resources
Hartline
Coulee City
Wilson Creek
Krupp
Ephrata
Quincy
Moses Lake
George
Warden
Royal City
Matawa
TETRA TECH
0 5 10 15 20 25
Miles


GRANT COUNTY
SPECIAL FLOOD HAZARD AREAS
Flood Zone
1 Percent Annual Chance Special Flood Hazard (100 Year)
0.2 Percent Annual Chance Special Flood Hazard (500 Year)
Data Sources
FEMA Digital Flood Insurance Rate Maps
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
Electric City
Grand Coulee
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Moses Lake
Warden
Royal City
Matawa
TETRA TECH
0 5 10 15 20 25
Miles


GRANT COUNTY
LANDSLIDE HAZARD AREAS
STEEP SLOPES, NEHRP SOFT SOILS
15-30 percent slope, NEHRP D and E Soils
Greater than 30 percent slope, NEHRP D and E Soils
Data Sources
Steep Slopes - 10 Meter DEM, NEHRP Soil
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Warden
Royal City
Matawa
Crab Creek
TETRA TECH
0 5 10 15 20 25
Miles


GRANT COUNTY
LANDFIRE - FIRE REGIME GROUPS
Fire Regime Group I
Fire Regime Group II
Fire Regime Group III
Fire Regime Group IV
Fire Regime Group V
Data Sources
Fire Regime Groups - LANDFIRE
Grant County
WA Department of Natural Resources
Hartline
Coulee City
Wilson Creek
Krupp
Soap Lake
Ephrata
Quincy
George
Warden
Royal City
Matawa
TETRA TECH
0 5 10 15 20 25
Miles

CHAPTER 3. CITY OF EPHRATA ANNEX

3.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Jeremy Burns, Fire Chief
800 A St. SE
Ephrata WA, 98823
Telephone: 509-754-4666

Alternate Point of Contact
Wes Crago, City Administrator
121 Alder Street SW
Ephrata WA, 98823
Telephone: 509-754-4601

3.2 JURISDICTION PROFILE

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

Date of Incorporation— 1909

Current Population— 7,870 (2013 estimate)

Population Growth— During the previous mitigation plan, Ephrata's population was estimated at 6,950 (2006 postcensal estimate). Ephrata is the second most populated city in Grant County.

Location and Description—This community lies in central Grant County and is characterized as an economically disadvantaged community with an institutional economic base. The city is situated alongside and below Beezley Hill (or Monument Hill), which is the highest point in Grant County. The downtown portion of Ephrata is within a floodplain.

Brief History— Ephrata residents began to discuss the concept of a dam on the Columbia River in 1918. The development of Grand Coulee Dam started transforming the community into a government town and the theme continued when the U.S. Army Air Corps built a training base in Ephrata in 1942. After the war in 1951, the Columbia Basin Project was created, delivering water from Grand Coulee Dam to over 600,000 acres of farmland. The people of Grant County formed a utility district and began construction of two great hydroelectric dams on the Columbia River south of Grand Coulee Dam. These two dams continue to provide Grant County with power. (City of Ephrata 2013).

Climate— Most of the air masses and weather systems crossing eastern Washington are traveling under the influence of the prevailing westerly winds. In the summer season, air from over the continent results in low relative humidity and high temperatures. In the winter, cold weather prevails. Extremes in temperature in both summer and winter occur when the inland basin is under the influence of air from over the continent. During most of the year, prevailing wind is from the west or southwest. Northeasterly winds are more frequent in fall and winter. Extreme wind velocities can be expected to reach 50 mph at least once in two years (Grant County Hazard Mitigation Plan, 2006).

The Columbia Basin is a semi-arid region with four distinct seasons. The land receives 8 to 11 inches of precipitation annually in the western and southern part, with about 1.0 to 1.5

inches of precipitation June through August. In winter, the maritime influence is strong due to prevailing westerly winds from the Pacific Ocean. Summer days are typically hot and dry. Extreme temperatures commonly exceed 100° F and reaching below 0° F in winter. (Grant County Comprehensive Plan, 2006).

Governing Body Format-The City of Ephrata is governed by a mayor and city council.

Development Trends— The City of Ephrata anticipates a continued growth rate of 1 to 2 percent. Growth is directed to locations not considered as critical areas such as flood prone or geologically hazardous areas except where structures are built to approved flood prevention ordinance standards. This includes building up to 3 feet above highest adjacent grade with thickened footings. Very few infill properties are present in the city and as existing structures are improved the city will continue to emphasize current flood development standards. The city has passed a water system fee to improve water infrastructure. These improvements will support new wells, pressure zones and water reservoirs to increase capacity, pressure and fire flow for all areas of the city over the next 5 to 10 years.

The City of Ephrata participates in the National Flood Insurance Program and is a Community Rating System Community (Class 7), which allows the city to obtain 15% reduction in flood insurance premiums. The city continues to verify compliance every year. The building department fully operates under building code requirements that require new and substantially improved buildings to be build 3 feet above highest adjacent grade; 2 feet above base flood elevation. The city will continue maintaining and cleaning storm drains and problem sewers to prevent potential build ups that could cause damage. The city is currently working with the U.S. Bureau of Reclamation, Quincy Columbia Basin Irrigation District, Grant County, and surrounding property owners to develop a maintenance schedule and plan to maintain the existing flood control ditch and drainage retention pond at the low end of the ditch.

3.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 2-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 2-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957
Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

3.4 HAZARD RISK RANKING

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

TABLE 3-2.
HAZARD RISK RANKING

Rank	Natural Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Storm	42
2	Wildfire	33
3	Flood	42
4	Volcano	32
5	Earthquake	14
6	Drought	36
7	Dam Failure	6
8	Landslide	6
	Technological Hazard Type	*Reserved for subsequent plan update*
1		
2		
3		
4		

3.5 CAPABILITY ASSESSMENT

The legal, regulatory, administrative, technical, and fiscal capabilities are included in Table 3-3.

TABLE 3-3.
CAPABILITY ASSESSMENT

LEGAL AND REGULATORY CAPABILITY

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Y	N	N	Y	2009 International Building Codes
Zoning Code	Y	N	N	Y	EMC Title 19
Subdivisions	Y	N	N	N	EMC Title 18
Post Disaster Recovery	N	N	N	.1.1.1.1 N	
Real Estate Disclosure	N	N	N	.1.1.1.2 N	
Growth Management	Y	N	N	Y	Res. 07-889
Site Plan Review	Y	N	N	N	EMC Title 18
Special Purpose (flood management, critical areas)	Y	N	N	Y	EMC 19 EMC 20.08
Planning Documents					
General Plan	Y	Y	N	Y	GMA compliant 1999, update 2006
Floodplain or Basin Plan	N	Y	N	N	FEMA, FIRM Maps 2/18/09, participates NFIP
Storm water Plan	N	N	N	N	
Capital Improvement Plan	Y	Y	N	Y	Ephrata Comp Plan
Habitat Conservation Plan	Y	Y	N	Y	EMC 20.08, Ephrata Comp Plan
Economic Development Plan	Y	Y	N	Y	Ephrata Comp Plan
Emergency Response Plan	Y	N	N	N	4/19/2006
Shoreline Management Plan	N	N	N	N	No shorelines of statewide significance
Post Disaster Recovery Plan	Y	N	N	N	4/19/2006

ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Community Development/Planner
Engineers or professionals trained in building or infrastructure construction practices	Y	Public Works Dept/ Building Official, PW Director, Construction Inspector
Planners or engineers with an understanding of natural hazards	Y	Community Development/Director Public Works Dept./Building Official
Staff with training in benefit/cost analysis	Y	Various departments
Floodplain manager	Y	Community Development/Director
Surveyors	N	
Personnel skilled or trained in GIS applications	Y	Community Development/Director
Scientist familiar with natural hazards in local area	N	
Emergency manager	Y	City Administrator, Fire Chief, Police Chief
Grant writers	Y	Various departments

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

COMMUNITY CLASSIFICATION SYSTEMS			
	Participating?	Classification	Date Classified
Community Rating System	Y	7	2010
Building Code Effectiveness Grading Schedule	Y	4/4	4/2012
Public Protection	Y	5	2006
Storm Ready	N		
Firewise	N		

3.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 3-4 lists the initiatives and their priority levels that comprise the jurisdiction's hazard mitigation plan.

3.7 STATUS OF PREVIOUS PLAN INITIATIVES

Table 3-4 summarizes the current status of initiatives that were adopted by the City of Ephrata for the previous hazard plan. Those that are directly carried over as actions in this hazard plan are also indicated as such in Table 3-4.

3.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The City of Ephrata may need additional support in evaluating technological hazards within its jurisdiction. The City coordinates these and other emergency planning efforts with the Grant County Department of Emergency Management.

3.9 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Ephrata are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Table 3-4.
HAZARD MITIGATION ACTION PLAN MATRIX

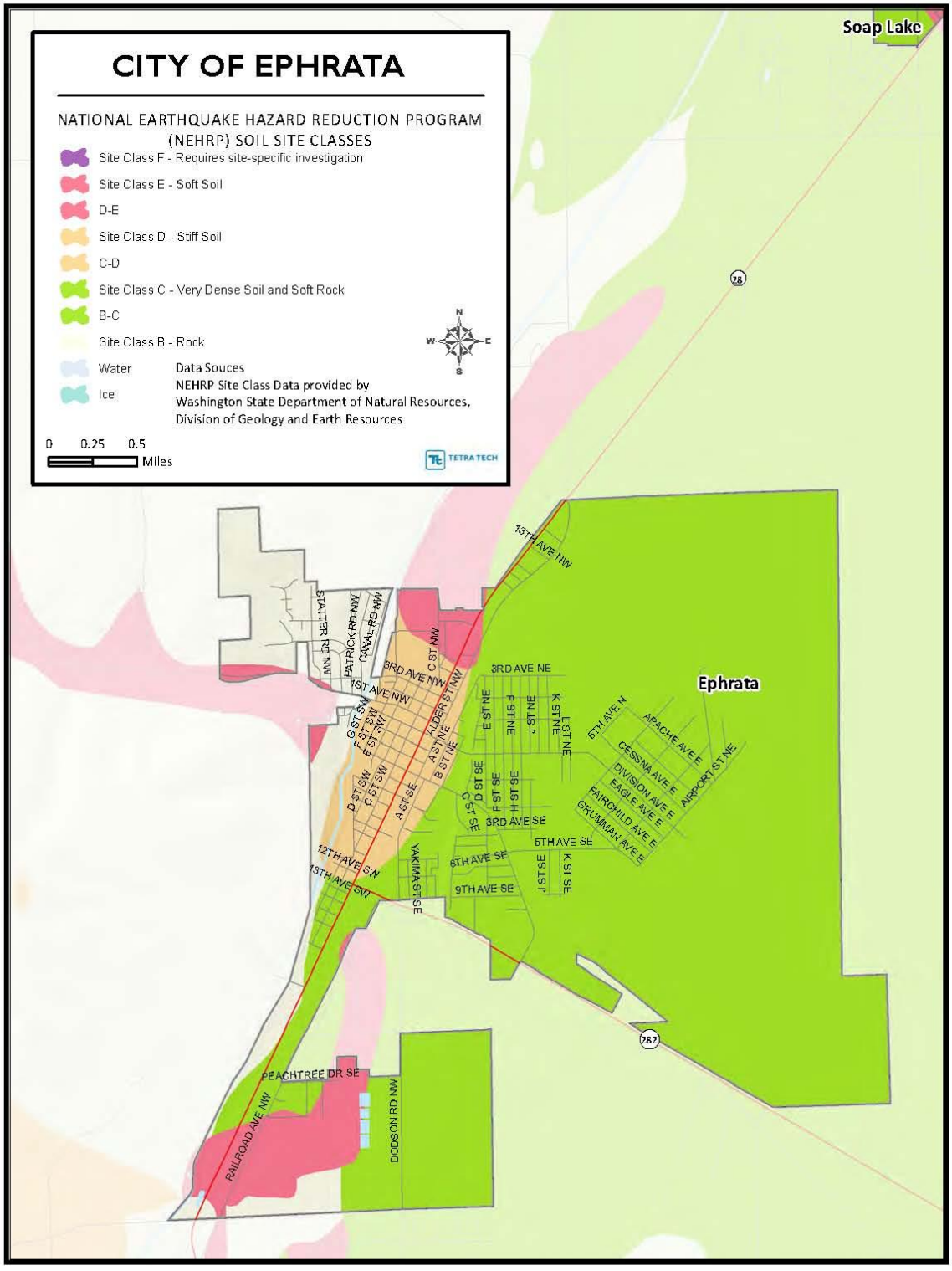
Initiative #E-MH1—City of Ephrata							
Description / Department Responsible	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Improvements to city water supply / City Administration	Severe Storm, Hazardous Materials, Flood	Medium (Priority 1 of 2)	2.86:1	$250,000	Unknown	2013-2018	Yes
Initiative:	Back-up power generators for wells, perimeter fencing, telemetry upgrades and general security improvements to city water supply.						
Mitigation Type:	Property Protection						
Rationale:	Protect the city's water system from a variety of hazards.						
Plan Goal(s):	Goal #2 Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters.						
Plan Objective(s):	Objective #1, Reduce hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area.						

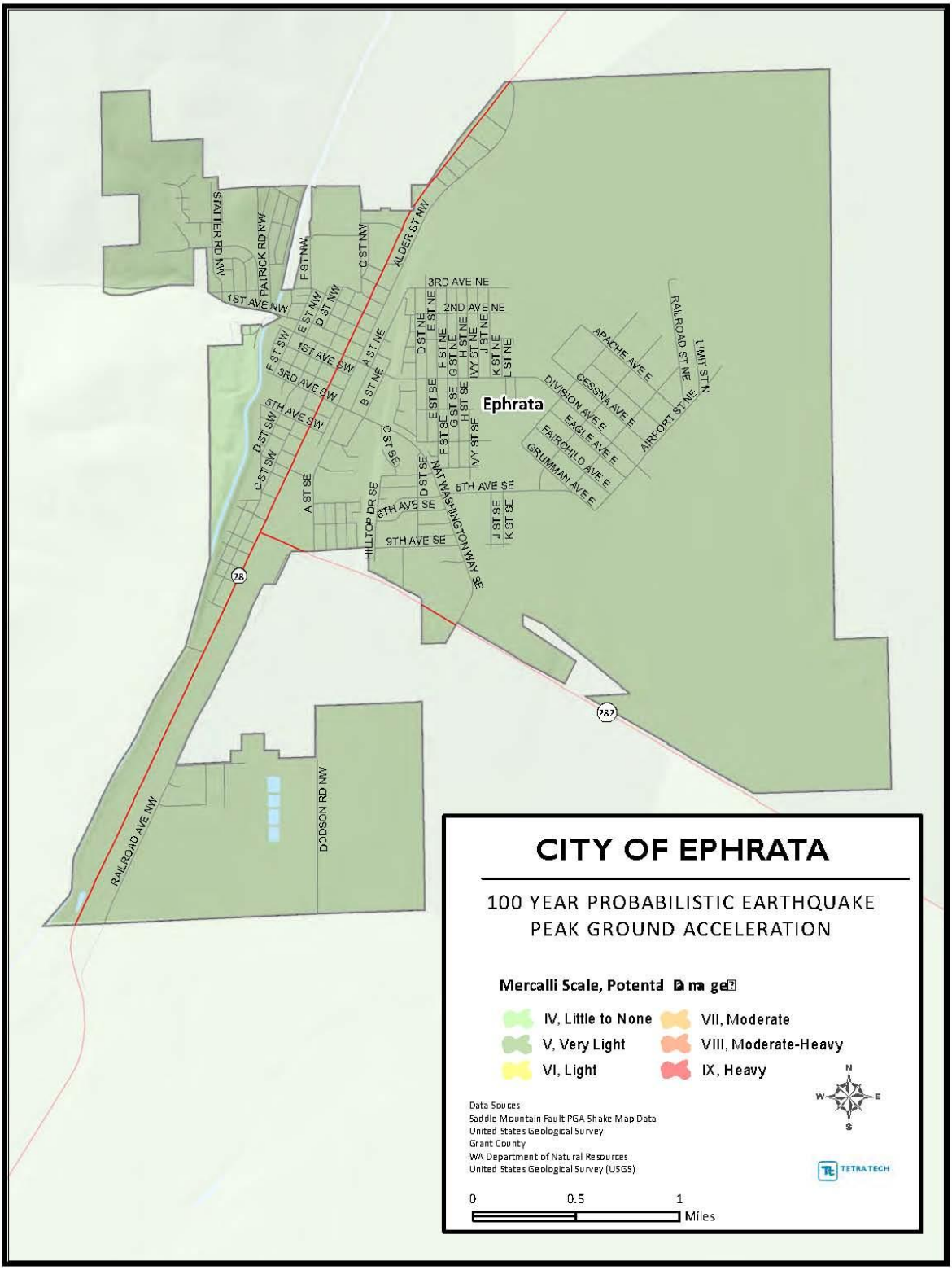
Status Update:	Identified goals and objectives revised to align with plan update.

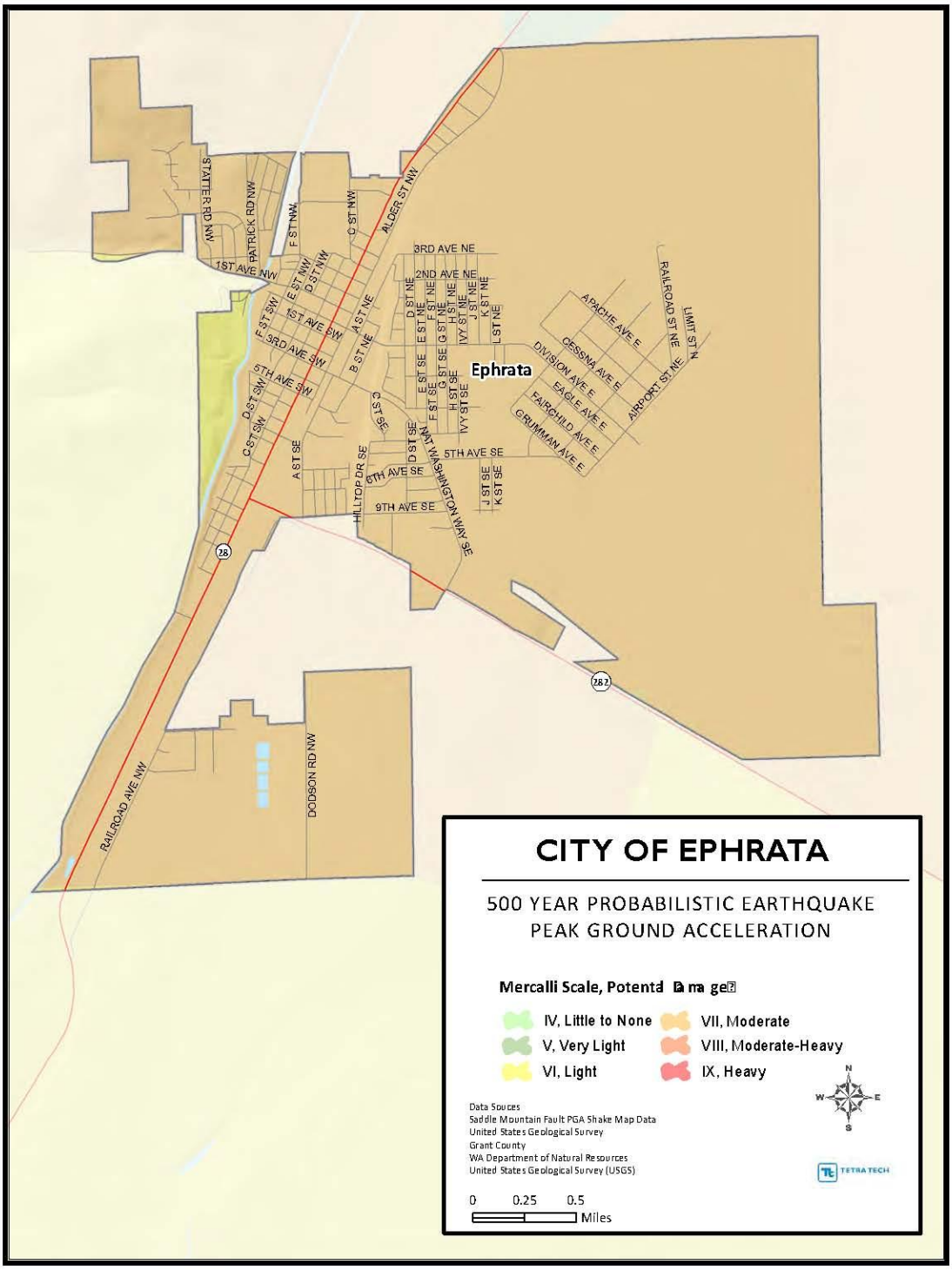
Initiative #E-MH2—City of Ephrata

Description / Department Responsible	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Relocate critical city government facilities / Ephrata City Public Works	Severe Storm, Hazardous Materials	Medium (Priority 2 of 2)	42:1	$500,000	Unknown	2013-2018	Yes, modified

Initiative:	Due to potential hazards, it is desired to move the City Hall, Police Station, City Shop and Fire Station to a centralized location outside of the flood plain, away from the railroad tracks and hazardous industrial sites.
Mitigation Type:	Property Protection and Emergency Services
Rationale:	Critical city government and emergency response facilities are located in an area vulnerable to flood and hazardous materials.
Plan Goal(s):	Goal #1 Protect life, property and the environment.
Plan Objective(s):	Objective #1, Reduce hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8, Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.
Status Update:	Identified goals and objectives revised to align with plan update. Cost estimate increased to reflect updated planning needs.


CITY OF EPHRATA
NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM
(NEHRP) SOIL SITE CLASSES
Site Class F - Requires site-specific investigation
Site Class E - Soft Soil
D-E
Site Class D - Stiff Soil
C-D
Site Class C - Very Dense Soil and Soft Rock
B-C
Site Class B - Rock
Water
Ice
Data Souces
NEHRP Site Class Data provided by
Washington State Department of Natural Resources,
Division of Geology and Earth Resources
0 0.25 0.5
Miles
TETRA TECH
Soap Lake
Ephrata
28
282
13TH AVE NW
STATTER RD NW
PATRICK RD NW
CANAL RD NW
3RD AVE NW
1ST AVE NW
C ST NW
ALDER ST NW
3RD AVE NE
E ST NE
F ST NE
J ST NE
K ST NE
L ST NE
5TH AVE N
APACHE AVE E
CESSNA AVE E
DIVISION AVE E
EAGLE AVE E
FAIRCHILD AVE E
GRUMMAN AVE E
AIRPORT ST NE
G ST SW
F ST SW
E ST SW
D ST SW
C ST SW
A ST SE
B ST NE
A ST NE
D ST SE
C ST SE
F ST SE
H ST SE
3RD AVE SE
5TH AVE SE
6TH AVE SE
9TH AVE SE
12TH AVE SW
13TH AVE SW
YAKIMA ST SE
K ST SE
J ST SE
PEACHTREE DR SE
RAILROAD AVE NW
DODSON RD NW


Ephrata
STATTER RD NW
PATRICK RD NW
1ST AVE NW
F ST NW
E ST NW
D ST NW
C ST NW
ALDER ST NW
3RD AVE NE
2ND AVE NE
D ST NE
E ST NE
F ST NE
G ST NE
H ST NE
IVY ST NE
J ST NE
K ST NE
L ST NE
A ST NE
B ST NE
1ST AVE SW
F ST SW
3RD AVE SW
5TH AVE SW
D ST SW
C ST SW
A ST SW
E ST SE
F ST SE
G ST SE
H ST SE
IVY ST SE
C ST SE
D ST SE
5TH AVE SE
6TH AVE SE
9TH AVE SE
HILLTOP DR SE
WASHINGTON WAY SE
J ST SE
K ST SE
APACHE AVE E
CESSNA AVE E
DIVISION AVE E
EAGLE AVE E
FAIRCHILD AVE E
GRUMMAN AVE E
RAILROAD ST NE
AIRPORT ST NE
LIMIT ST N
28
282
RAILROAD AVE NW
DODSON RD NW
CITY OF EPHRATA
100 YEAR PROBABILISTIC EARTHQUAKE PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
N
W
E
S
Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
TETRA TECH
0
0.5
1
Miles


CITY OF EPHRATA
500 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
0 0.25 0.5
Miles
Ephrata
ALDER ST NW
STATTER RD NW
PATRICK RD NW
1ST AVE NW
F ST NW
E ST NW
D ST NW
C ST NW
3RD AVE NE
2ND AVE NE
D ST NE
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IVY ST SE
C ST SE
D ST SE
5TH AVE SE
6TH AVE SE
9TH AVE SE
HILLTOP DR SE
WASHINGTON WAY SE
J ST SE
K ST SE
APACHE AVE E
CESSNA AVE E
DIVISION AVE E
EAGLE AVE E
FAIRCHILD AVE E
GRUMMAN AVE E
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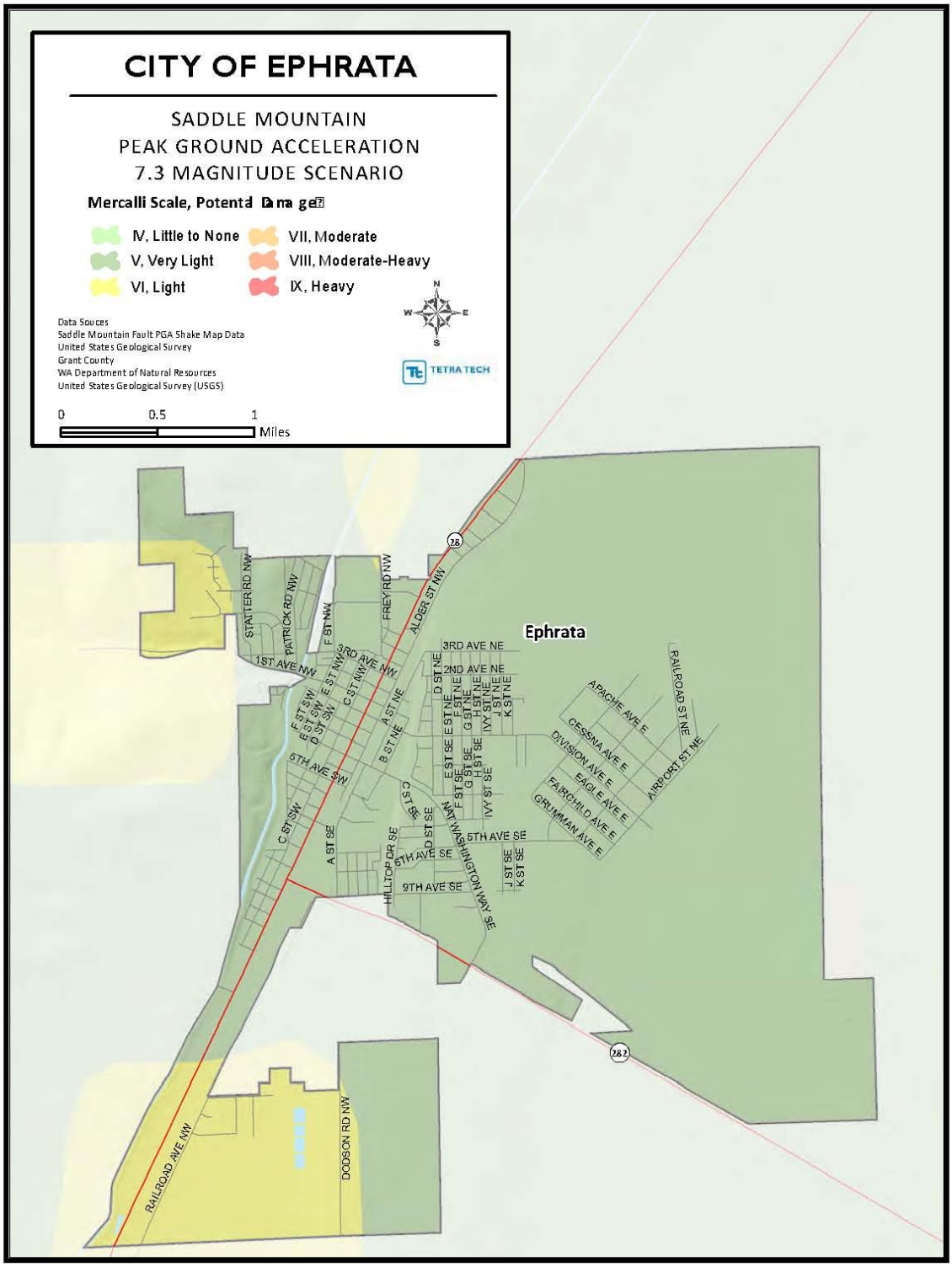
CITY OF EPHRATA
SADDLE MOUNTAIN
PEAK GROUND ACCELERATION
7.3 MAGNITUDE SCENARIO
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
TETRA TECH
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Miles
Ephrata
28
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STATTER RD NW
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FREY RD NW
ALDER ST NW
1ST AVE NW
3RD AVE NW
E ST NW
C ST NW
A ST NE
B ST NE
3RD AVE NE
2ND AVE NE
D ST NE
E ST NE
G ST NE
H ST NE
IVY ST NE
J ST NE
K ST NE
APACHE AVE E
CESSNA AVE E
DIVISION AVE E
EAGLE AVE E
FAIRCHILD AVE E
GRUMMAN AVE E
RAILROAD ST NE
AIRPORT ST NE
F ST SW
E ST SW
D ST SW
5TH AVE SW
C ST SW
A ST SE
C ST SE
D ST SE
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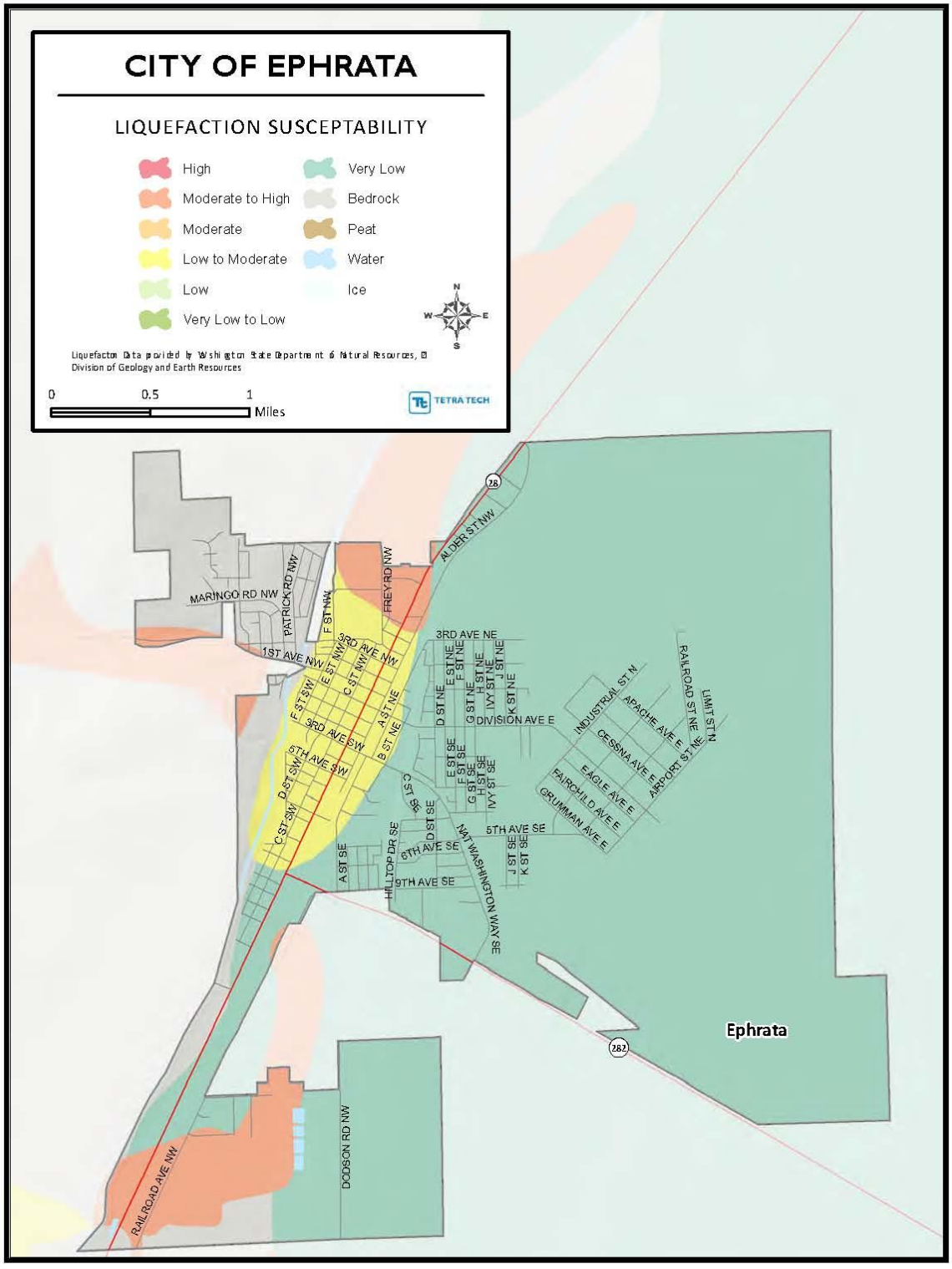
IVY ST SE
5TH AVE SE
6TH AVE SE
9TH AVE SE
HILLTOP DR SE
NAT WASHINGTON WAY SE
J ST SE
K ST SE
RAILROAD AVE NW
DODSON RD NW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LIQUEFACTION SUSCEPTABILITY
High
Moderate to High
Moderate
Low to Moderate
Low
Very Low to Low
Very Low
Bedrock
Peat
Water
Ice
N
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Liquefaction Data provided by Washington State Department of Natural Resources, Division of Geology and Earth Resources
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Ephrata
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FREY RD NW
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1ST AVE NW
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3RD AVE SW
5TH AVE SW
5TH AVE SE
6TH AVE SE
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DIVISION AVE E
INDUSTRIAL ST N
APACHE AVE E
CESSNA AVE E
EAGLE AVE E
FAIRCHILD AVE E
GRUMMAN AVE E
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LIMIT ST N
MT WASHINGTON WAY SE
HILLTOP DR SE
DODSON RD NW
RAILROAD AVE NW
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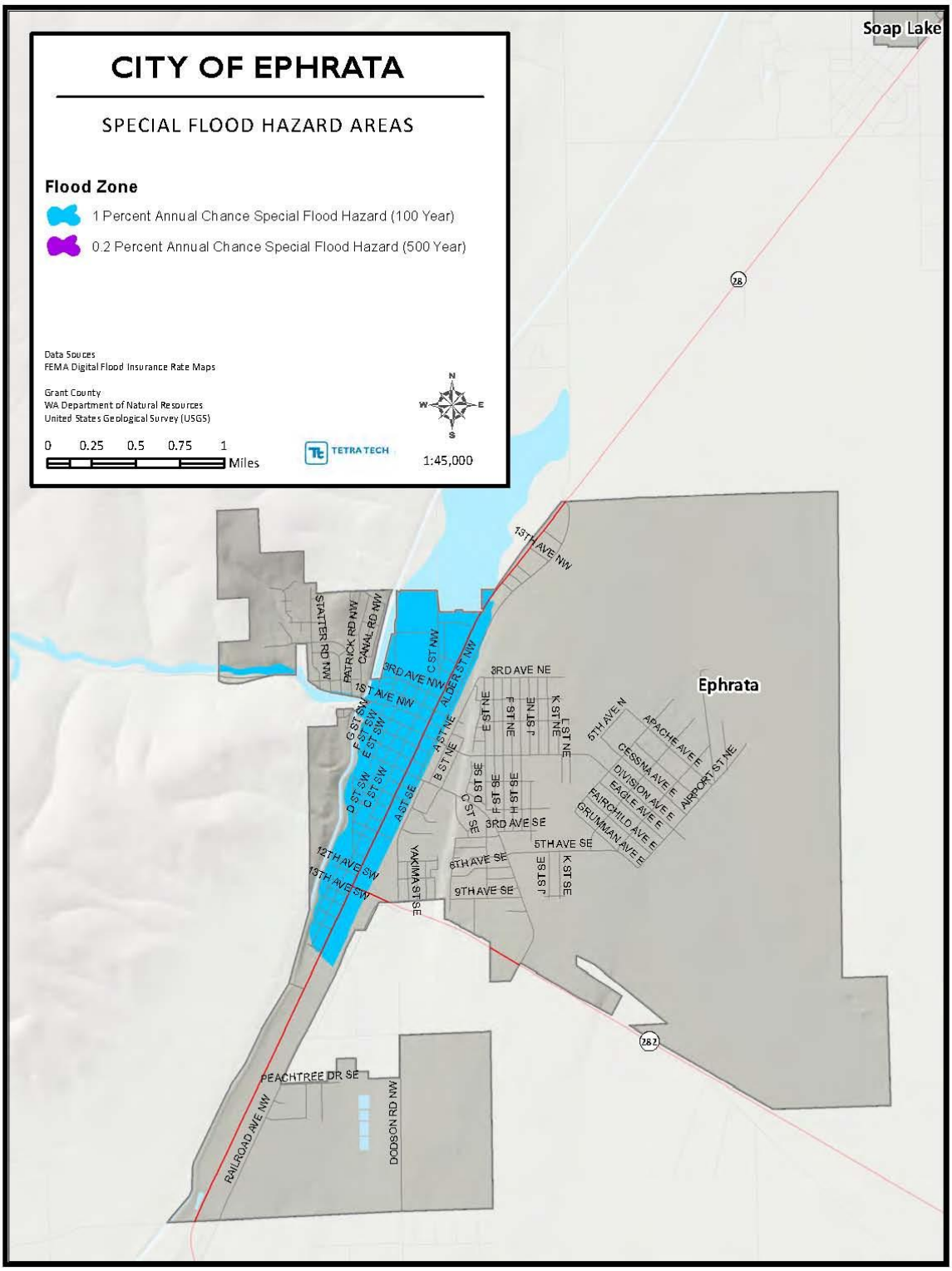
CITY OF EPHRATA
SPECIAL FLOOD HAZARD AREAS
Flood Zone
1 Percent Annual Chance Special Flood Hazard (100 Year)
0.2 Percent Annual Chance Special Flood Hazard (500 Year)
Data Sources
FEMA Digital Flood Insurance Rate Maps
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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DIVISION AVE E
EAGLE AVE E
FAIRCHILD AVE E
GRUMMAN AVE E
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12TH AVE SW
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DODSON RD NW
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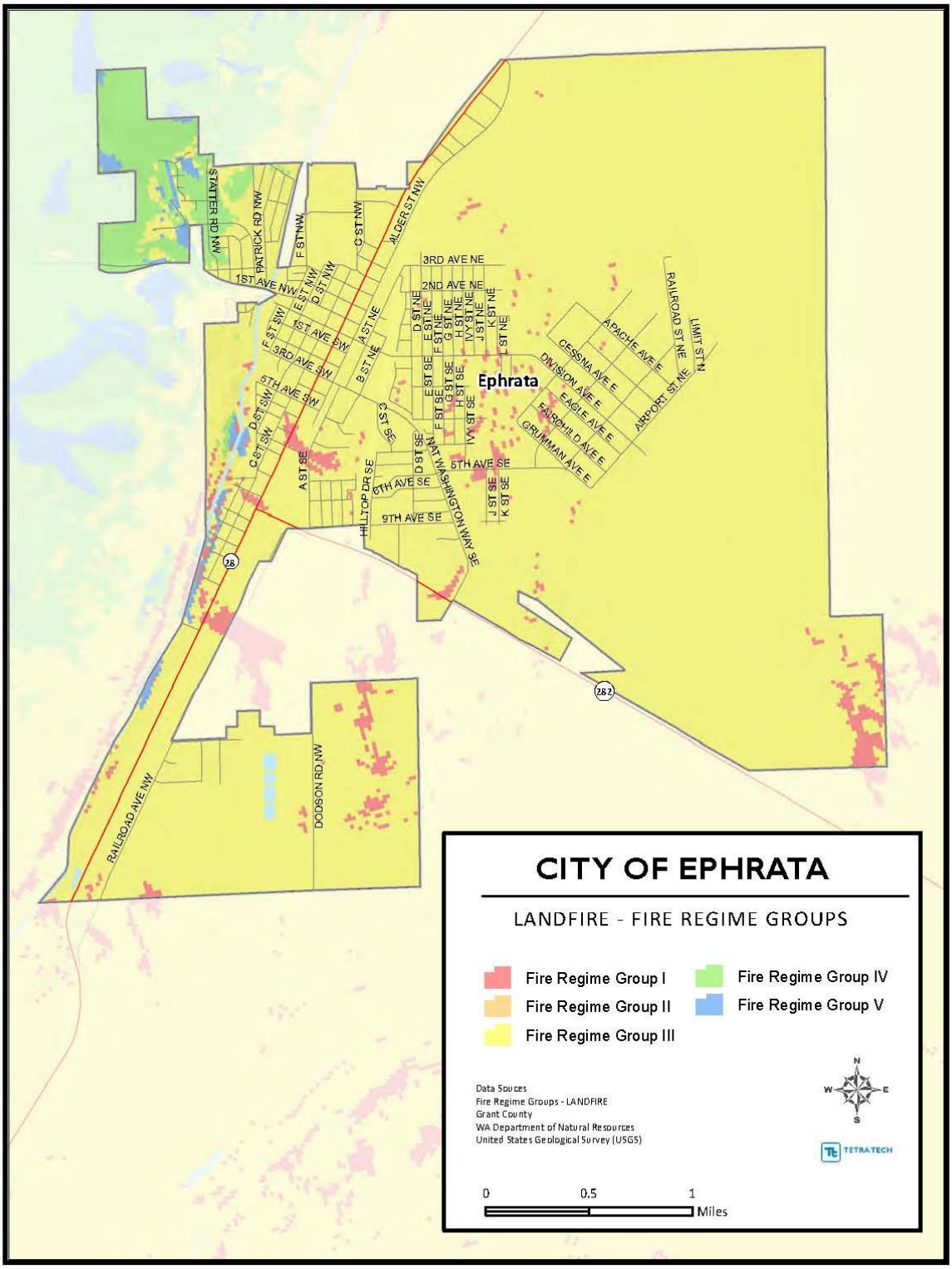
CITY OF EPHRATA
LANDFIRE - FIRE REGIME GROUPS
Fire Regime Group I
Fire Regime Group II
Fire Regime Group III
Fire Regime Group IV
Fire Regime Group V
Data Sources
Fire Regime Groups - LANDFIRE
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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FAIRCHILD AVE E
GRUMMAN AVE E
AIRPORT ST NE
RAILROAD ST NE
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282

CHAPTER 4. CITY OF MOSES LAKE ANNEX

4.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Gilbert Alvarado, Community Development Director
321 Balsam St.
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Alternate Point of Contact
Anne Henning, Senior Planner
321 S. Balsam
Moses Lake, WA 98837
Telephone: 509-764-3747

4.2 JURISDICTION PROFILE

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

Date of Incorporation—1910 as Neppel, 1938 Moses Lake

Current Population— 21,250 (2013)

Population Growth— The city experiences moderate population growth. During the previous mitigation plan, Moses Lake's population was estimated at 16,830 (2006 postcensal estimate).

Location and Description— Moses Lake is located in central Grant County and is characterized as an economically disadvantaged community with an industrial and manufacturing economic base. The city's main feature is the lake, which attracts tourists for fishing and watersports.

Brief History—Pioneering farmers settled on the shores of Moses Lake. In the 1930's a highway was built through the town. In 1940's a military training base was established that became the Larson Air Force Base, which increased Moses Lake's population. This base was deactivated in 1965 due to budget reductions in B-52 bases. The city has experienced steady and moderate growth, becoming a center for commercial and recreational interest in the area. (City of Moses Lake, 2013).

Climate— Most of the air masses and weather systems crossing eastern Washington are traveling under the influence of the prevailing westerly winds. In the summer season, air from over the continent results in low relative humidity and high temperatures. In the winter, cold weather prevails. Extremes in temperature in both summer and winter occur when the inland basin is under the influence of air from over the continent. During most of the year, prevailing wind is from the west or southwest. Northeasterly winds are more frequent in fall and winter. Extreme wind velocities can be expected to reach 50 mph at least once in two years; 60 to 70 mph once in 50 years and 80 mph once in 100 years. (Grant County Hazard Mitigation Plan, 2006).

The Columbia Basin is a semi-arid region with four distinct seasons. The land receives 8 to 11 inches of precipitation annually in the western and southern part, with about 1.0 to 1.5 inches of precipitation June through August. In winter, the maritime influence is strong due to prevailing westerly winds from the Pacific Ocean. Summer days are typically hot and dry. Extreme temperatures commonly exceed 100° F and reaching below 0° F in winter. (Grant County Comprehensive Plan, 2006).

Governing Body Format— The city is governed by a city council with an appointed city manager.

Development Trends— The city continues to develop at a 3 percent growth rate. This growth was anticipated by the Comprehensive Plan and planned measures are in place to address the growth. Industrial and commercial growth continues to foster a solid tax base. The City of Moses Lake has experienced additional growth between 2007 and 2013. The increased development has been primarily residential growth which has resulted in a population change from 17,440 in 2007 to 21,250 in 2013.

Future development is anticipated as detailed within the adopted Growth Management Act compliant Comprehensive Plan. Future development is anticipated at a 3% growth rate through the year 2025. The City of Moses Lake has realized the estimated 3% growth rate as proposed.

The City of Moses Lake has not increased or decreased its vulnerability to hazards and remains constant given the development that has occurred. The City of Moses Lake has adopted measures enforcing floodplain management as part of continued compliance requirements; Moses Lake Municipal Code Chapter 18.53, Flood Hazard Areas. All building permit activity within the special flood hazard areas detailed in Chapter 18.53 are subject to and will continue to be subject to the requirement of this code.

4.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 4-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 4-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957
Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

4.4 HAZARD RISK RANKING

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

TABLE 4-2.
HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Storm	42

TABLE 4-2.
HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
2	Drought	36
3	Wildfire	33
4	Volcano	32
5	Flood	12
6	Earthquake	14
7	Dam Failure	12
8	Landslide	6
	Technological Hazard Type	*Reserved for subsequent plan update*
1		
2		
3		
4		
5		

4.5 CAPABILITY ASSESSMENT

TABLE 4-3.
CAPABILITY ASSESSMENT

LEGAL AND REGULATORY CAPABILITY

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	Yes	Yes	Yes	
Zoning Code	Yes	N/A	N/A	Yes	
Subdivisions	Yes	N/A	N/A	Yes	
Post Disaster Recovery	N/A	N/A	N/A	N/A	
Real Estate Disclosure	N/A	N/A	N/A	1.1.1.1 N/	
Growth Management	Yes	N/A	Yes	Yes	
Site Plan Review	Yes	N/A	N/A	No	
Special Purpose (flood management, critical areas)	Yes	Yes	Yes	Yes	
Planning Documents					
General Plan	Yes	N/A	Yes	Yes	
Floodplain or Basin Plan	Yes	Yes	Yes	Yes	Participates NFIP
Storm water Plan	Yes	Yes	Yes	Yes	
Capital Improvement Plan	Yes	N/A	N/A	Yes	
Habitat Conservation Plan	No	N/A	N/A	N/A	
Economic Development Plan	Yes	N/A	N/A	Yes	
Emergency Response Plan	Yes	Yes	Yes	Yes	Comprehensive Emergency Management Plan (county)
Shoreline Management Plan	Yes	N/A	Yes	Yes	
Post Disaster Recovery Plan	No	No	No	No	

ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community Development Department/ 4 positions
Engineers or professionals trained in building or infrastructure construction practices	Yes	Community Development Department & Municipal Services Department/10positions
Planners or engineers with an understanding of natural hazards	Yes	Community Development Department/ 4 positions
Staff with training in benefit/cost analysis	Yes	Community Development Department & Finance Department/ 2 positions
Floodplain manager	No	N/A
Surveyors	Yes	Municipal Services Department/ 2 positions
Personnel skilled or trained in GIS applications	Yes	Municipal Services Department/1 position
Scientist familiar with natural hazards in local area	No	N/A
Emergency manager	No	N/A
Grant writers	Yes	Community Development/ 2 positions

FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Eligible
Capital Improvements Project Funding	Eligible
Authority to Levy Taxes for Specific Purposes	Eligible
User Fees for Water, Sewer, Gas or Electric Service	Eligible
Incur Debt through General Obligation Bonds	Eligible
Incur Debt through Special Tax Bonds	Eligible
Incur Debt through Private Activity Bonds	Eligible
Withhold Public Expenditures in Hazard-Prone Areas	Eligible
State Sponsored Grant Programs	Eligible
Development Impact Fees for Homebuyers or Developers	Not Adopted

COMMUNITY CLASSIFICATION SYSTEMS			
	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule	Yes	2	2011

Public Protection	Yes	4	2012
Storm Ready	No		
Firewise	No		

4.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 4-4 lists the initiatives and their priority levels that comprise the jurisdiction's hazard mitigation plan.

4.7 STATUS OF PREVIOUS PLAN INITIATIVES

Table 4-4 summarizes the current status of initiatives that were adopted by the City of Moses Lake for the previous hazard plan. Those that are directly carried over as actions in this hazard plan are also indicated as such in Table 4-4.

4.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The City of Moses Lake may need additional support in evaluating technological hazards within its jurisdiction. The City coordinates these and other emergency planning efforts with the Grant County Department of Emergency Management.

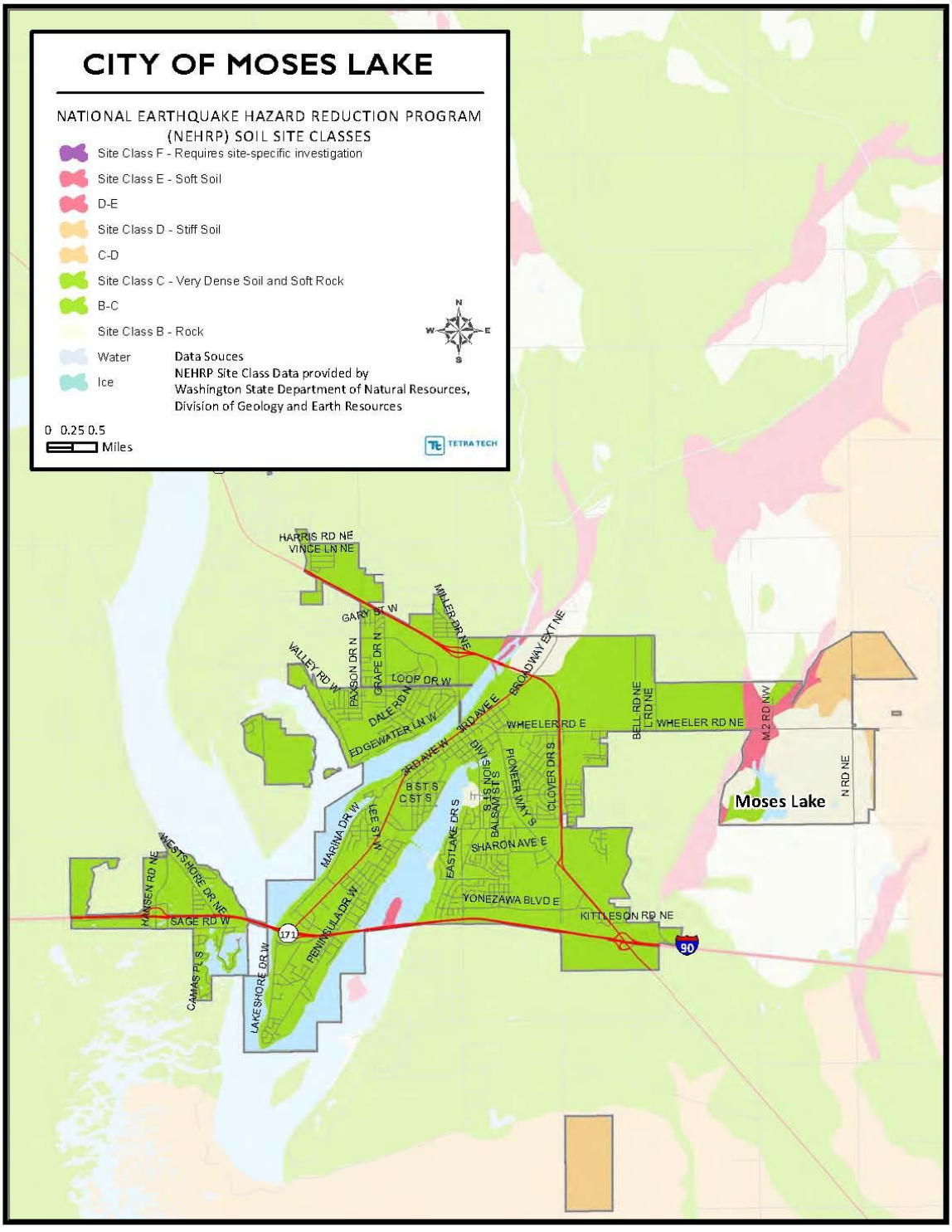
4.9 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Moses Lake are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Table 4-4.
HAZARD MITIGATION ACTION PLAN MATRIX

Initiative #ML-MH1—City of Moses Lake							
Description / Department Responsible	**Hazards Mitigated**	**Priority Level**	**Cost Benefit Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Backup Power / Municipal Services Department	Severe Storm	Medium (Priority 1 of 1)	6:11:1	$30,000	Budgeted	2013-2018	Yes, modified
Initiative:	Back-up power generator for Sage Bay Sewer Lift Station						
Mitigation Type:	Structural Project						
Rationale:	Allows the lift station to operate continuously during power interruptions due to natural hazards, reducing property damage and protecting the environment caused by sewer overflow.						
Plan Goal(s):	Goal #1, Protect life, property, and the environment.						

Plan Objective(s):	Objective #1, Reduce hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #2, Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Status Update:	The installation of a backup generator is currently in process. Identified goals and objectives revised to align with plan update.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NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM
(NEHRP) SOIL SITE CLASSES
Site Class F - Requires site-specific investigation
Site Class E - Soft Soil
D-E
Site Class D - Stiff Soil
C-D
Site Class C - Very Dense Soil and Soft Rock
B-C
Site Class B - Rock
Water
Ice
Data Souces
NEHRP Site Class Data provided by
Washington State Department of Natural Resources,
Division of Geology and Earth Resources
0 0.25 0.5
Miles
TETRA TECH
N
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E
S
HARRIS RD NE
VINCE LN NE
GARY ST W
MILLER DR NE
VALLEY RD W
GRAPE DR N
PASSON DR N
LOOP DR W
DALE RD N
EDGEWATER LN W
BROADWAY EXT NE
3RD AVE E
3RD AVE W
WHEELER RD E
BELL RD NE
L RD NE
WHEELER RD NE
M 2 RD NW
N RD NE
Moses Lake
DIVISION ST S
BALSAM ST S
PIONEER WAY S
CLOVER DR S
B ST S
C ST S
MARINA DR W
E ST S
W ST S
EASTLAKE DR S
SHARON AVE E
YONEZAWA BLVD E
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171
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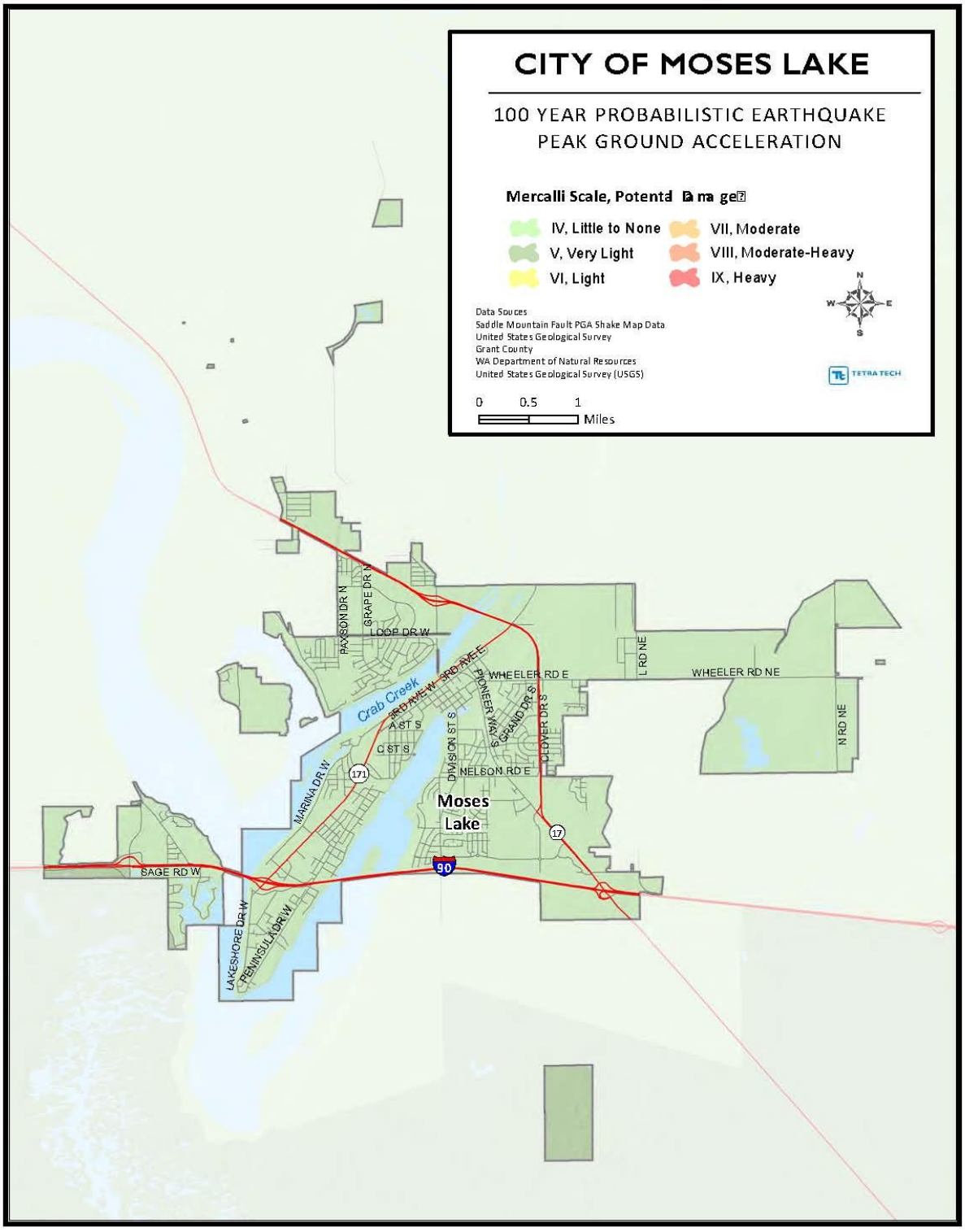
PENINSULA DR W
CAMAS PL S
LAKESHORE DR W


CITY OF MOSES LAKE
100 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
TETRA TECH
0 0.5 1
Miles
Moses Lake
Crab Creek
WHEELER RD E
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DIVISION ST S
NELSON RD E
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GRAPE DR N
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SAGE RD W
LAKESHORE DR W
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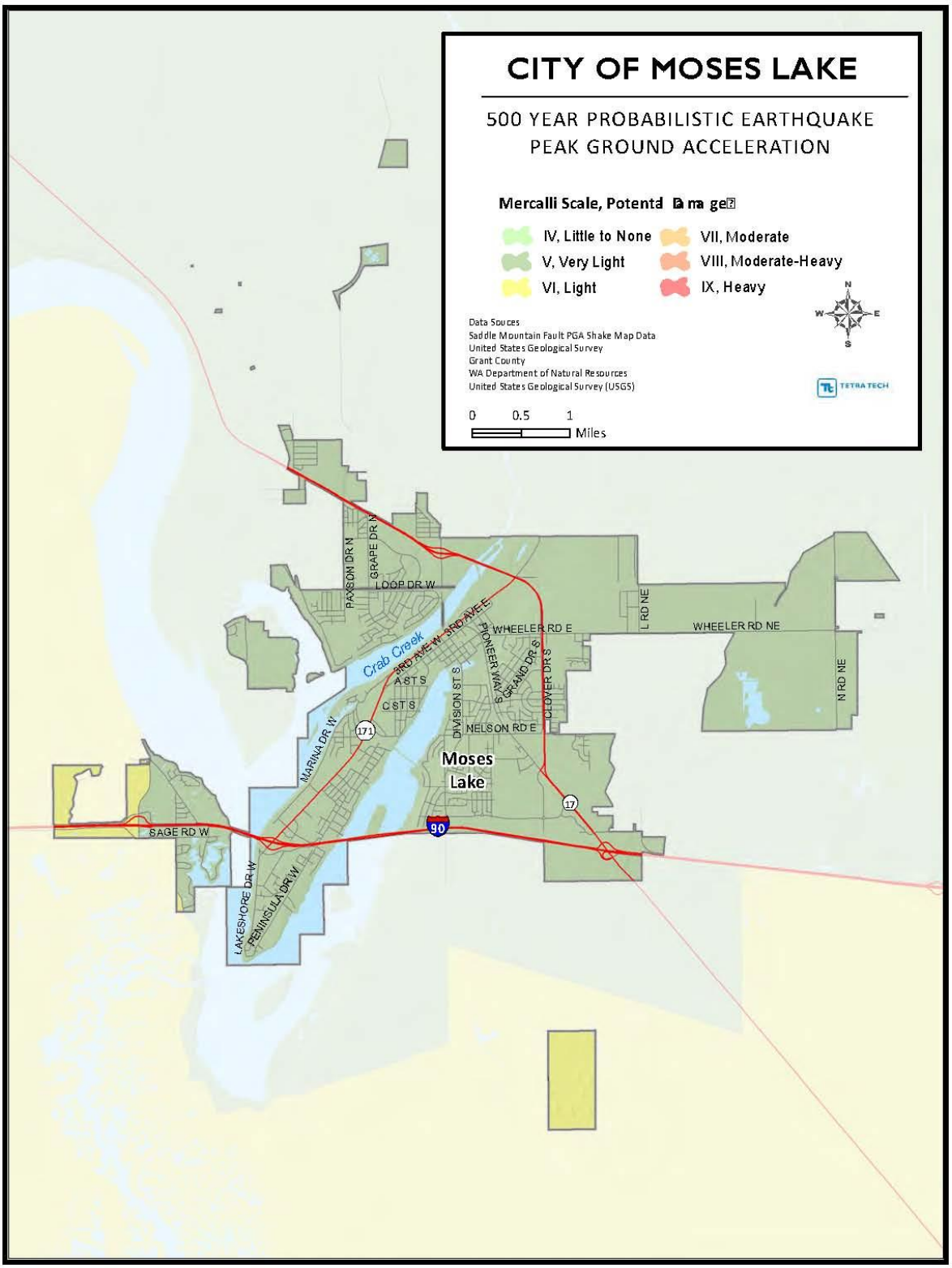
CITY OF MOSES LAKE
500 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
TETRA TECH
0 0.5 1
Miles
Crab Creek
Moses Lake
WHEELER RD E
WHEELER RD NE
LOOP DR W
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DIVISION ST S
PIONEER WAY S
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CLOVER DR S
NELSON RD E
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GRAPE DR N
MARINA DR W
SAGE RD W
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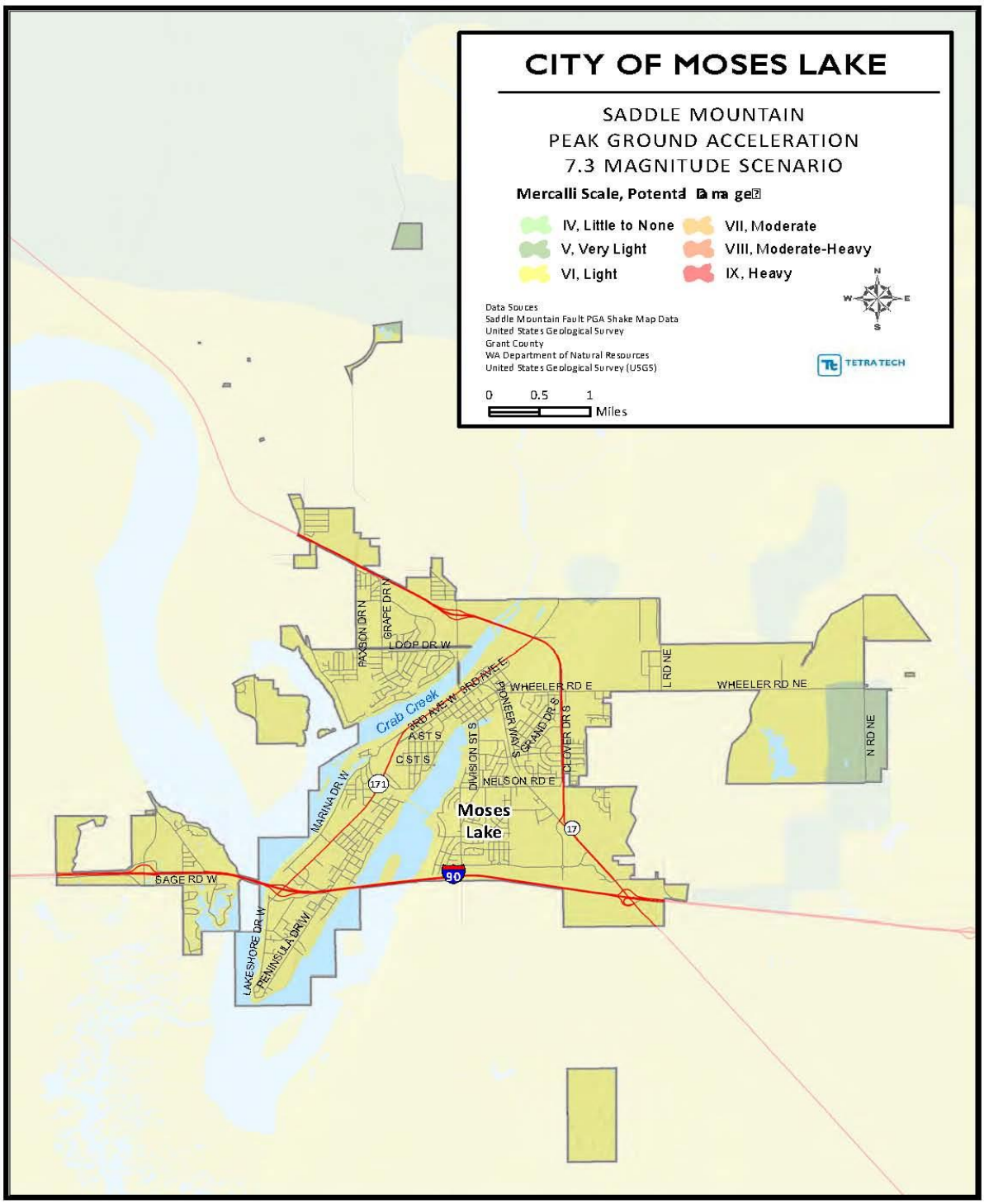
CITY OF MOSES LAKE
SADDLE MOUNTAIN
PEAK GROUND ACCELERATION
7.3 MAGNITUDE SCENARIO
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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Crab Creek
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GRAPE DR N
MARINA DR W
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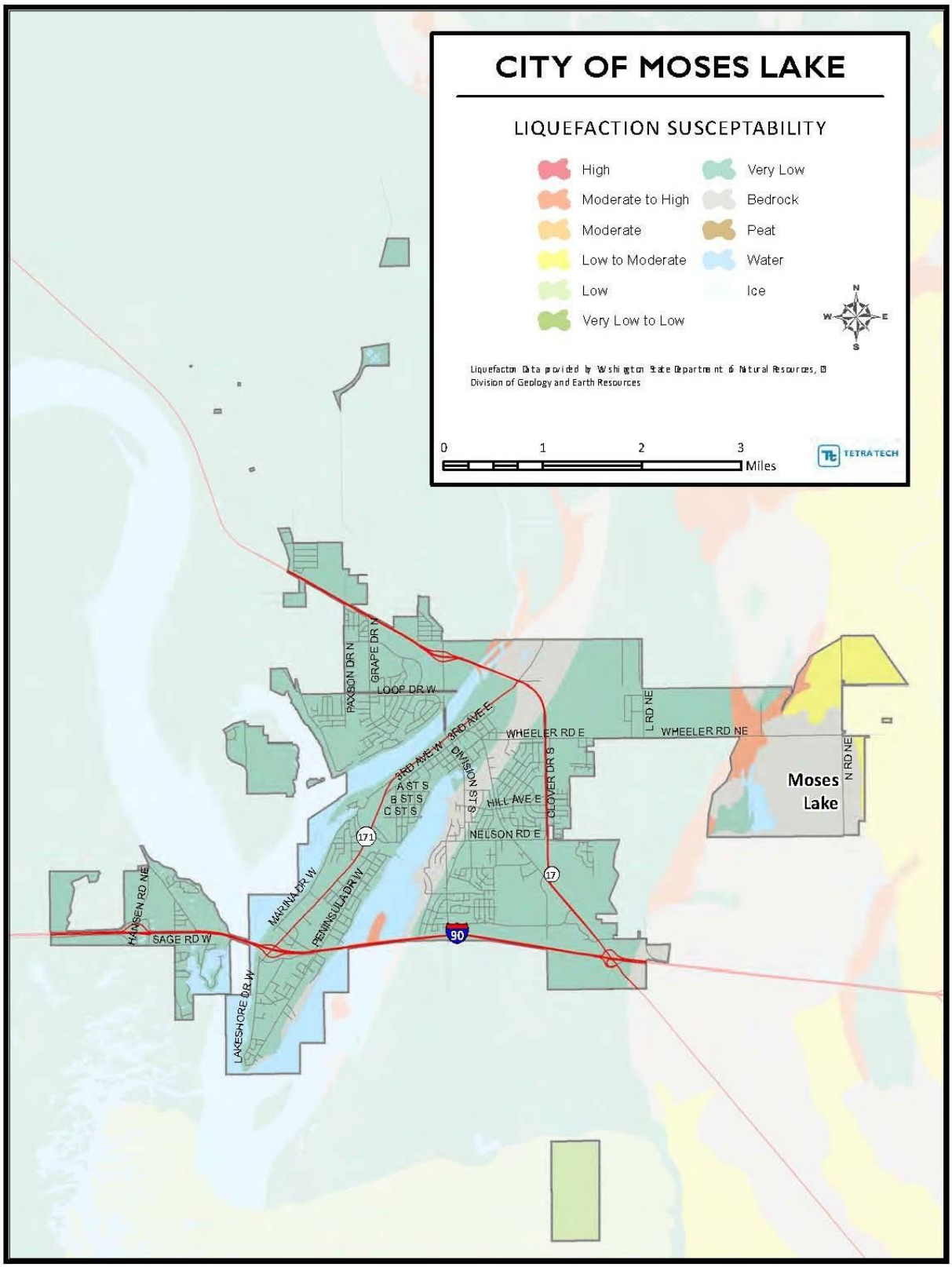
CITY OF MOSES LAKE
LIQUEFACTION SUSCEPTABILITY
High
Moderate to High
Moderate
Low to Moderate
Low
Very Low to Low
Very Low
Bedrock
Peat
Water
Ice
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Liquefaction Data provided by Washington State Department of Natural Resources, Division of Geology and Earth Resources
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PAXSON DR N
GRAPE DR N
LOOP DR W
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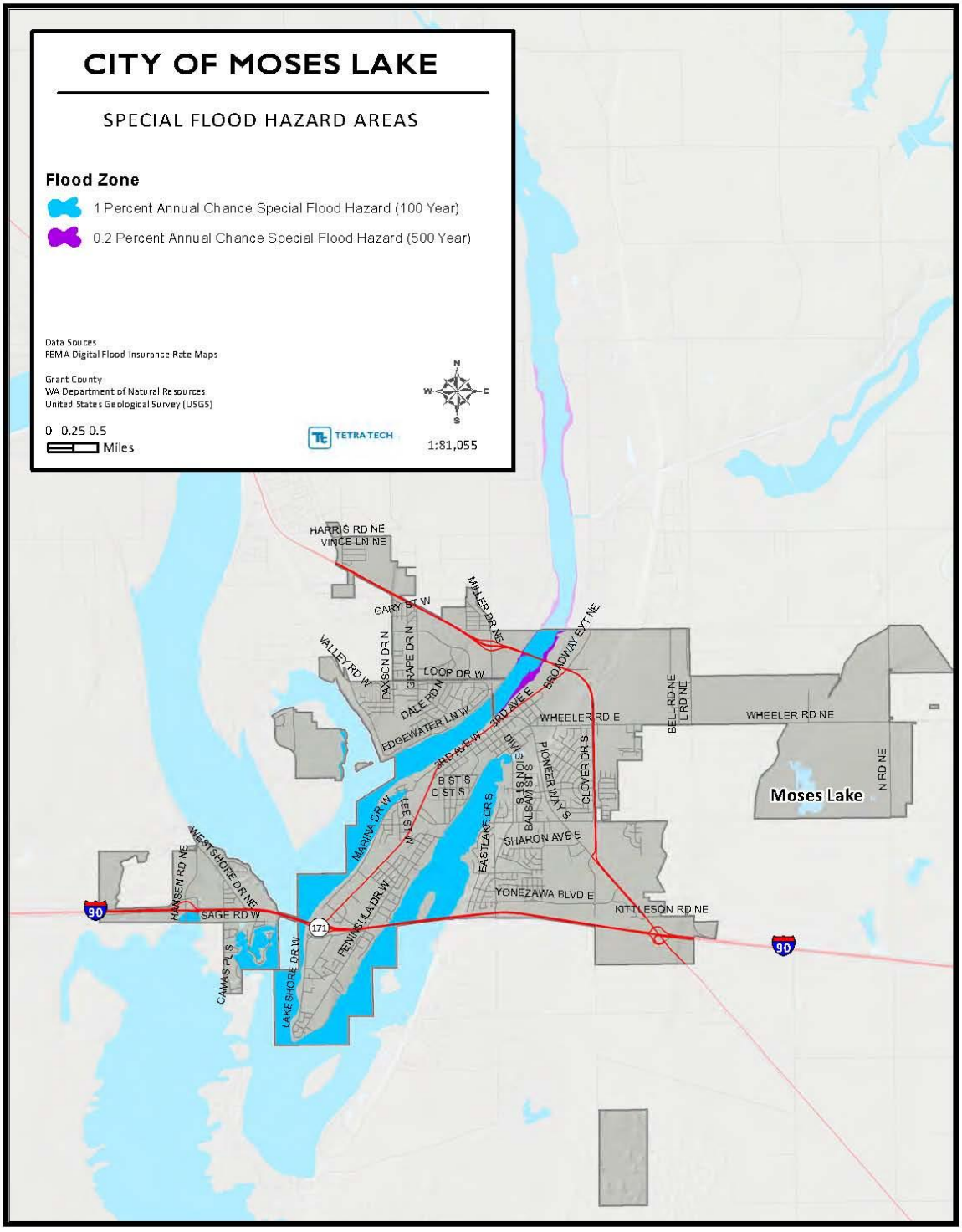
CITY OF MOSES LAKE
SPECIAL FLOOD HAZARD AREAS
Flood Zone
1 Percent Annual Chance Special Flood Hazard (100 Year)
0.2 Percent Annual Chance Special Flood Hazard (500 Year)
Data Sources
FEMA Digital Flood Insurance Rate Maps
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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PAXSON DR N
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LOOP DR W
DALE RD N
EDGEWATER LN W
3RD AVE E
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BELL RD NE
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Moses Lake
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MARINA DR W
EASTLAKE DR S
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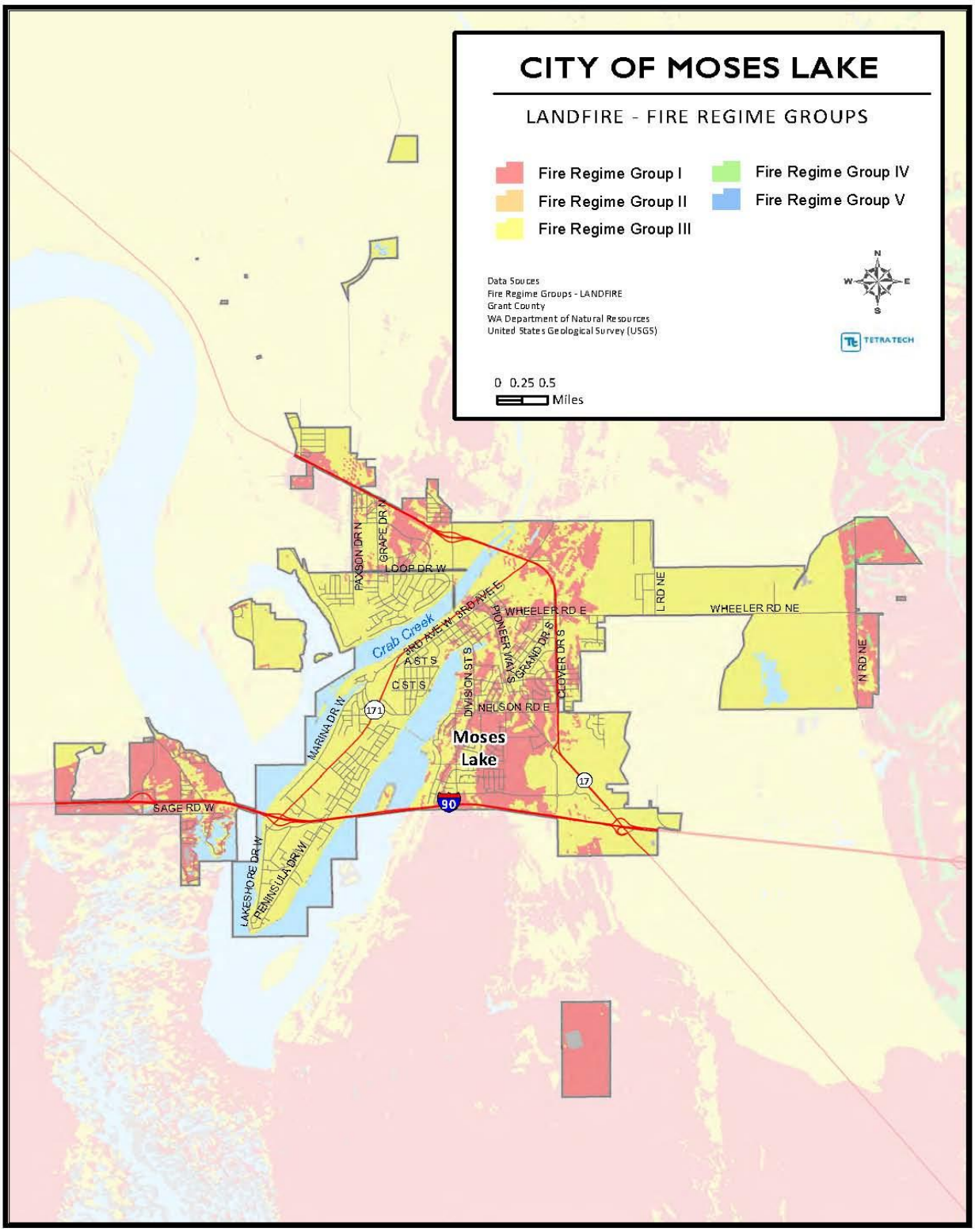
CITY OF MOSES LAKE
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Fire Regime Group IV
Fire Regime Group V
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Fire Regime Groups - LANDFIRE
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United States Geological Survey (USGS)
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PENINSULA DR W
LAKESHORE DR W
PAXSON DR N
GRAPE DR N
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CHAPTER 5. CITY OF WARDEN ANNEX

5.1 HAZARD MITIGATION PLAN POINT OF CONTACT

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121 S. Main Street
Warden WA 98857
Telephone: 509-349-2326

5.2 JURISDICTION PROFILE

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

Date of Incorporation— 1910

Current Population— 2,705 (2013)

Population Growth— The City of Warden has experienced steady growth over the past two decades; the population was 1,639 in 1990. During the previous mitigation plan, Warden's population was estimated at 2,575 (2006 postcensal estimate).

Location and Description— Warden is located in central Grant County and is characterized as an economically disadvantaged community with an agricultural economic base.

Climate— Most of the air masses and weather systems crossing eastern Washington are traveling under the influence of the prevailing westerly winds. In the summer season, air from over the continent results in low relative humidity and high temperatures. In the winter, cold weather prevails. Extremes in temperature in both summer and winter occur when the inland basin is under the influence of air from over the continent. During most of the year, prevailing wind is from the west or southwest. Northeasterly winds are more frequent in fall and winter. Extreme wind velocities can be expected to reach 50 mph at least once in two years; 60 to 70 mph once in 50 years and 80 mph once in 100 years. (Grant County Hazard Mitigation Plan, 2006).

Governing Body Format— The city is governed by a mayor and the elected officials that comprise the city council.

Development Trends— The Port District #8 of Warden is an instrumental factor in the Economic Development of Industry in the City of Warden. Also, several industries intend

on breaking ground for their distribution facility located near Pacific Coast Canola by the end of 2013, including CHS, Cenex, and Sun Basin Growers. Pacific Coast Canola started operations in January of 2013. There is no other future development scheduled at this time. All development is under the International Building Code.

The City of Warden participates in the National Flood Insurance Program. The city continues to verify compliance every year. The building department operates under the International Building Code requirements that require new and substantially improved code. The City is with the waste water contractor for the installation of a six million gallon anaerobic digester facility and the settling pond restoration that are within the identified flood plain. Department of Ecology and the Department of Health are the permitting entities.

5.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 5-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 5-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957
Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

5.4 HAZARD RISK RANKING

Table 5 -2 presents the ranking of the hazards of concern.

TABLE 5-2.
HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Storm	42
2	Drought	36
3	Volcano	32
4	Wildfire	27
5	Earthquake	14
6	Flood	12
7	Dam Failure	6
8	Landslide	6

TABLE 5-2.
HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
	Technological Hazard Type	*Reserved for subsequent plan update*
1		
2		
3		
4		
5		

5.5 CAPABILITY ASSESSMENT

The legal, regulatory, administrative, technical, and fiscal capabilities are included in Table 5-3.

TABLE 5-3.
CAPABILITY ASSESSMENT

LEGAL AND REGULATORY CAPABILITY

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Y	N	N	Y	W M C Title 15
Zoning Code	Y	N	N	Y	W M C Title 17
Subdivisions	Y	N	N	N	W M C Title 16
Post Disaster Recovery	N	N	N	.1.1.1.1 N	
Real Estate Disclosure	N	N	N	.1.1.1.2 N	
Growth Management	Y	N	N	Y	Res. 03-09
Site Plan Review	Y	N	N	N	W M C Title 17
Special Purpose (flood management, critical areas)	Y	N	N	Y	W M C Title 14
Planning Documents					
General Plan	Y	Y	N	Y	GMA compliant 2003, update 2009
Floodplain or Basin Plan	N	Y	N	N	FEMA, FIRM Maps, participates NFIP
Stormwater Plan	N	N	N	N	
Capital Improvement Plan	Y	Y	N	Y	Warden Comp Plan
Habitat Conservation Plan	Y	Y	N	Y	W M C Title 14, Warden Comp Plan
Economic Development Plan	Y	Y	N	Y	Warden Comp Plan
Emergency Response Plan	Y	N	N	N	Emergency Management Plan 4/19/2006
Shoreline Management Plan	N	N	N	N	No shorelines of statewide significance
Post Disaster Recovery Plan	Y	N	N	N	Emergency Management Plan 4/19/2006

ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Consulting Engineers
Engineers or professionals trained in building or infrastructure construction practices	Y	Consulting Engineers Public Works Director, Construction Inspector
Planners or engineers with an understanding of natural hazards	Y	Community Development/Director Public Works Dept./Building Official
Staff with training in benefit/cost analysis	Y	Various City Staff
Floodplain manager	Y	Community Development/Director
Surveyors	N	
Personnel skilled or trained in GIS applications	Y	Consulting Engineers City Administrator/Public Works Director
Scientist familiar with natural hazards in local area	N	
Emergency manager	Y	City Administrator, Fire Chief, Police Chief
Grant writers	Y	Various City Staff

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

COMMUNITY CLASSIFICATION SYSTEMS			
	Participating?	Classification	Date Classified
Community Rating System	N		
Building Code Effectiveness Grading Schedule	N		
Public Protection	Y	7	1989
Storm Ready	N		

Firewise	N		

5.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 5-4 lists the initiatives and their priority levels that comprise the jurisdiction's hazard mitigation plan.

5.7 STATUS OF PREVIOUS PLAN INITIATIVES

Table 5-4 summarizes the current status of initiatives that were adopted by the City of Warden for the previous hazard plan and/or those that are directly carried over as actions into this plan update.

5.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The City of Warden may need additional support in evaluation technological hazards within its jurisdiction. The City coordinates these and other emergency planning efforts with the Grant County Department of Emergency Management.

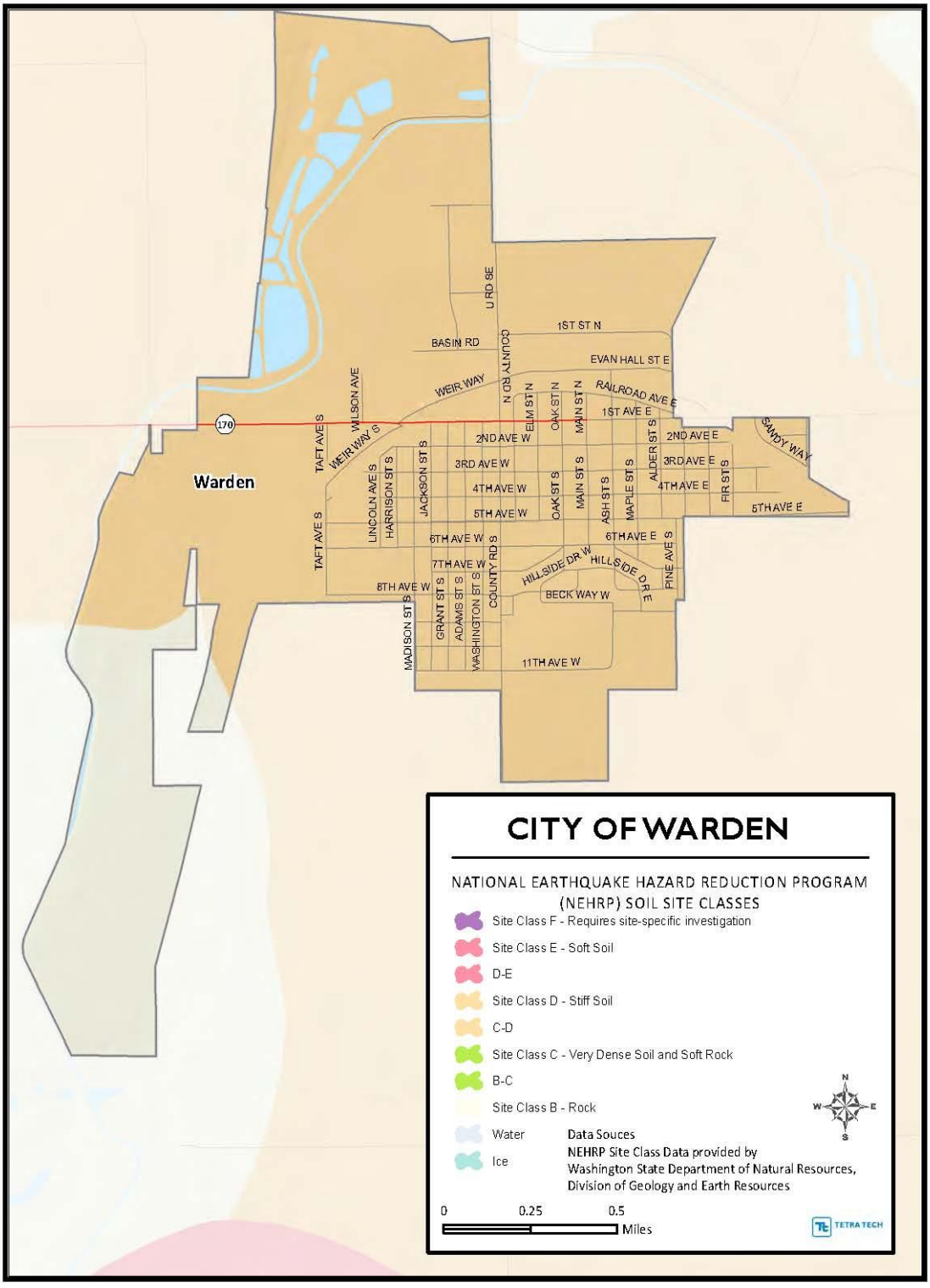
5.9 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Warden are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Table 5-4.
HAZARD MITIGATION ACTION PLAN MATRIX

Initiative #W-MH1—City of Warden							
Description / Department Responsible	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Backup Power / Warden Public Works Department	Severe Storm	Medium (Priority 1 of 1)	6:11:1	$30,000	Unknown	2013-2018	Yes, modified
Initiative:	Back-up power generator for Well #6						
Mitigation Type:	Structural Project and Emergency Services						
Rationale:	Well #6 supplies the majority of water for the City's firefighting and potable water system. The well uses a turban pump to pump the water to the city's two reservoirs. When filled to capacity (2.3 mg) the reservoirs can supply water for approximately 36 hours if the two potato processors are shut down and rationing measures are implemented. Without the use of this well it limits firefighting capabilities, further making city infrastructure vulnerable to fire.						
Plan Goal(s):	Goal #1, Protect life, property, and the environment. Goal #2, Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazard and disasters.						

Plan Objective(s):	Objective #1, Reduce hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8, Retrofit, purchase or relocate structures in hazard areas including those known to be repetitively damaged.
Status Update:	Identified goals and objectives revised to align with plan update.


CITY OF WARDEN
NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM
(NEHRP) SOIL SITE CLASSES
Site Class F - Requires site-specific investigation
Site Class E - Soft Soil
D-E
Site Class D - Stiff Soil
C-D
Site Class C - Very Dense Soil and Soft Rock
B-C
Site Class B - Rock
Water
Ice
Data Souces
NEHRP Site Class Data provided by
Washington State Department of Natural Resources,
Division of Geology and Earth Resources
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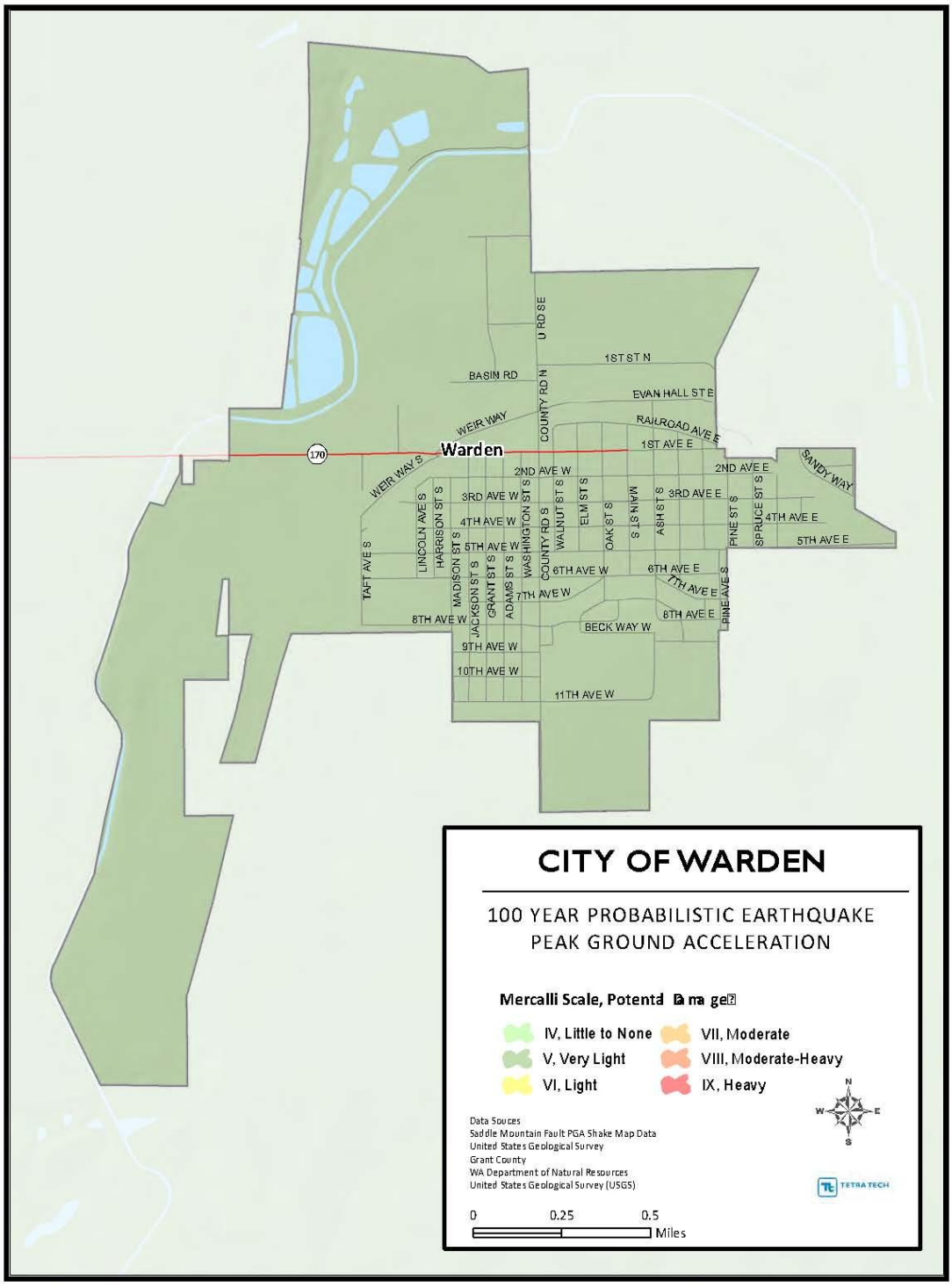
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OAK ST S
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ASH ST S
PINE ST S
SPRUCE ST S
PINE AVE S
TAFT AVE S
CITY OF WARDEN
100 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
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Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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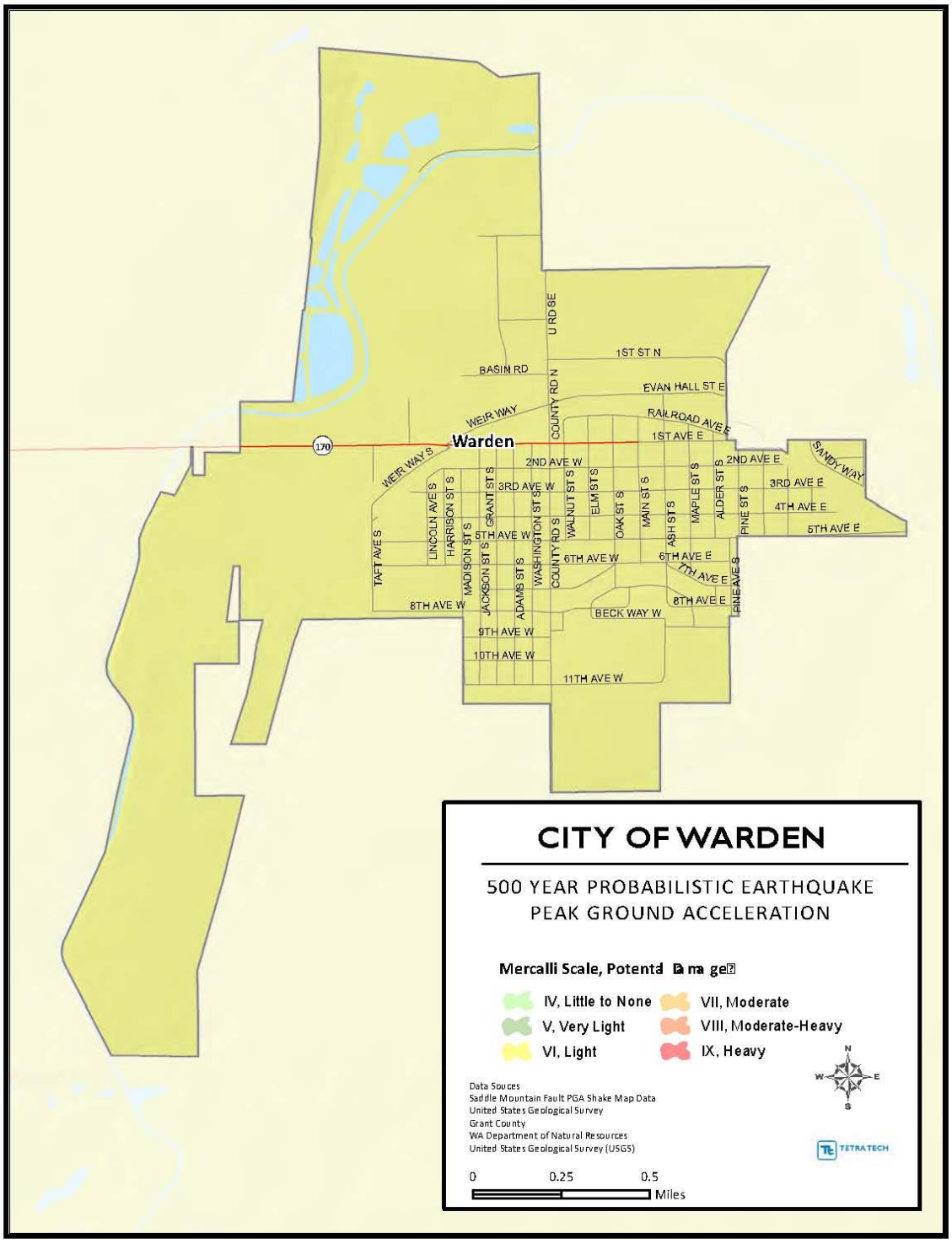
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CITY OF WARDEN
500 YEAR PROBABILISTIC EARTHQUAKE
PEAK GROUND ACCELERATION
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
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Data Sources
Saddle Mountain Fault PGA Shake Map Data
United States Geological Survey
Grant County
WA Department of Natural Resources
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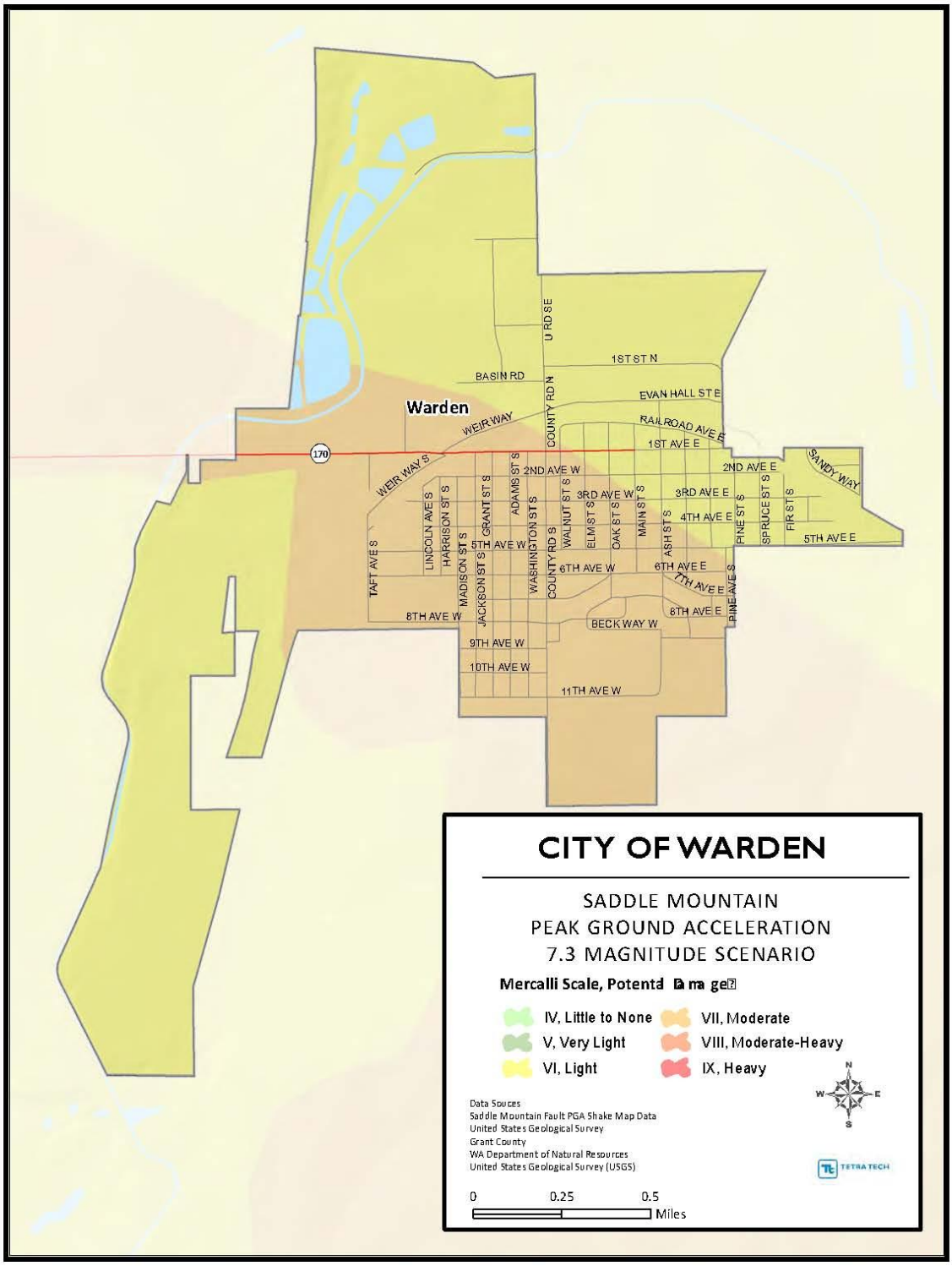
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SPRUCE ST S
FIR ST S
CITY OF WARDEN
SADDLE MOUNTAIN
PEAK GROUND ACCELERATION
7.3 MAGNITUDE SCENARIO
Mercalli Scale, Potential Damage
IV, Little to None
V, Very Light
VI, Light
VII, Moderate
VIII, Moderate-Heavy
IX, Heavy
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Data Sources
Saddle Mountain Fault PGA Shake Map Data
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Grant County
WA Department of Natural Resources
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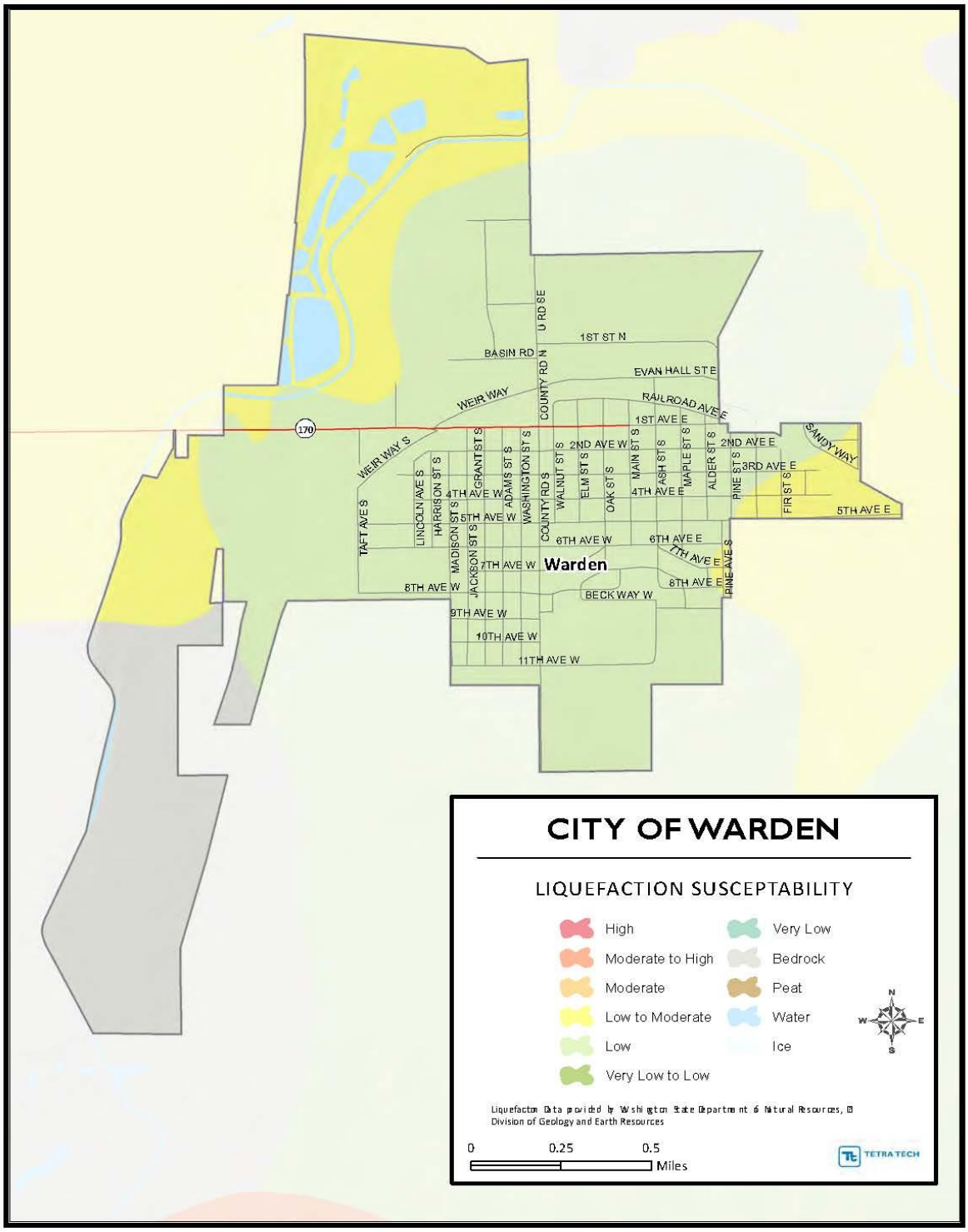
CITY OF WARDEN
LIQUEFACTION SUSCEPTABILITY
High
Moderate to High
Moderate
Low to Moderate
Low
Very Low to Low
Very Low
Bedrock
Peat
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Ice
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Liquefaction Data provided by Washington State Department of Natural Resources, Division of Geology and Earth Resources
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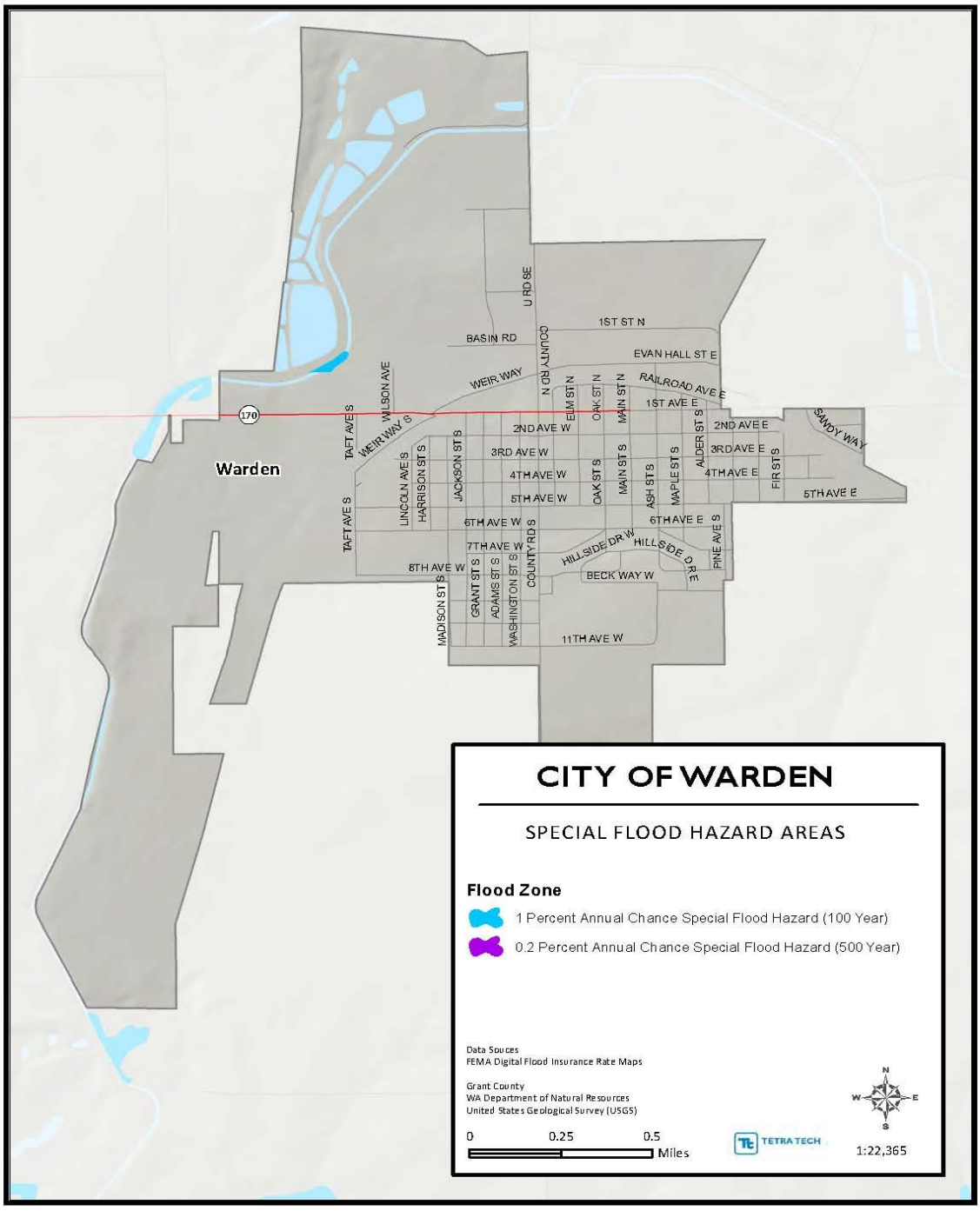
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CITY OF WARDEN
SPECIAL FLOOD HAZARD AREAS
Flood Zone
1 Percent Annual Chance Special Flood Hazard (100 Year)
0.2 Percent Annual Chance Special Flood Hazard (500 Year)
Data Sources
FEMA Digital Flood Insurance Rate Maps
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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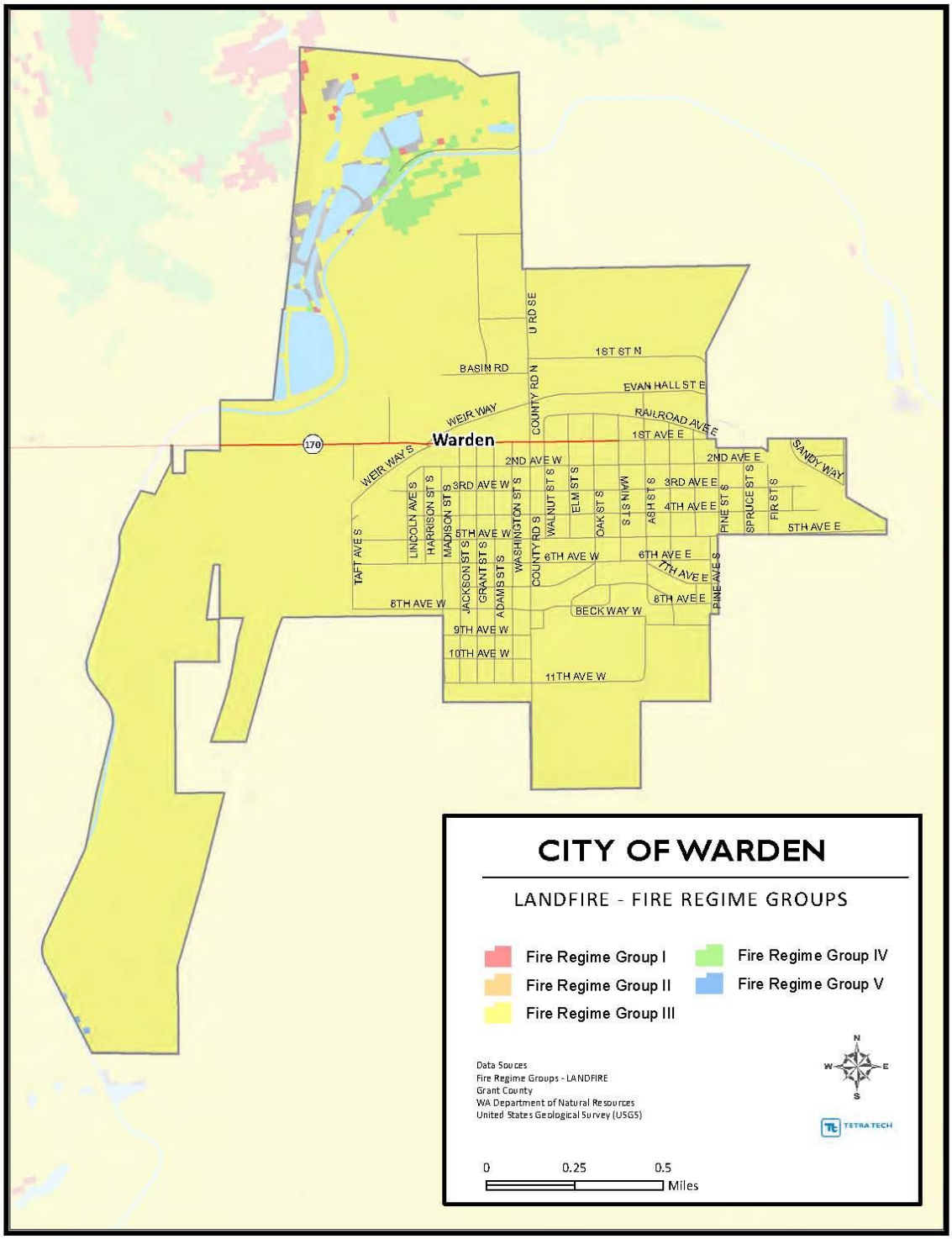
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LANDFIRE - FIRE REGIME GROUPS
Fire Regime Group I
Fire Regime Group II
Fire Regime Group III
Fire Regime Group IV
Fire Regime Group V
Data Sources
Fire Regime Groups - LANDFIRE
Grant County
WA Department of Natural Resources
United States Geological Survey (USGS)
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PART 4 —
FIRE PROTECTION DISTRICT ANNEXES

CHAPTER 6. FIRE PROTECTION DISTRICT 3 ANNEX

6.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Anthony Leibelt, Assistant Chief
1201 Central Avenue South
Quincy WA, 98848
Telephone: 509-787-2713

Alternate Point of Contact
Don Fortier, Fire Chief
1201 Central Avenue South
Quincy WA, 98848
Telephone: 509-787-2713

6.2 JURISDICTION PROFILE

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

Population Served—Rural population of 12,029 (2012)

Land Area Served—503 square miles

Critical Infrastructure/Equipment Owned by the Jurisdiction:

The district has 7 stations and 39 different pieces of apparatus to respond for medical aid, vehicle accidents, wildland fires, structure fires, hazardous materials and biological hazards.

Current and Anticipated Service Trends—

Grant County is a growing county in Central Washington. The fire district is growing along with it and expects to increase service to match it. Several of our stations will potentially need to be replaced or moved to meet that service need in the future. The Crescent Bar station is in a vulnerable location on an island with only one in and out for access. The building is not owned by the fire district and has been retro-fitted to a fire station from an old bath house and is a top priority for the fire district. The other two stations need to be relocated and reconstructed to better locations to meet the needs of growing communities. The improved locations will provide better access to their response areas when they can be replaced. The district as a whole is growing as new facilities are constructed in the area and this is putting a strain on the services we provide.

6.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 6-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 6-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957

Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

The storm events resulting in Presidential Disaster Declaration 1682 in Washington State had an impact on the primary municipality this fire district serves, the City of Quincy and surrounding area. Wind speeds occurred at 45 mph with gusts from 63 to 135 mph over a 12 hour period. Reported damages were estimated at $3,200,000 in Grant County. In the Quincy area, downed power lines and poles caused power outages for several days resulting in loss of economic production. Wind damages were sustained in several categories including residential, public works, school, hospital/ambulance, and businesses. Roof damages, structural collapse, downed trees, and irrigation system damages occurred. A public shelter was opened for residents displaced from their homes.

Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

6.4 HAZARD RISK RANKING

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

TABLE 6-2.
HAZARD RISK RANKING

Rank	Natural Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Storm	42
2	Wildfire	33
3	Drought	36
4	Flood	12
5	Earthquake	14
6	Volcano	32
7	Landslide	6
8	Dam Failure	12
	Technological Hazard Type	*Reserved for subsequent plan update*
1		
2		
3		
4		
5		

6.5 APPLICABLE REGULATIONS AND PLANS

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

- WAC 396-305 Standard for Firefighters (Fire Stations)
- NFPA 1: Fire Code requires all "new" facilities to have automatic fire sprinklers systems installed.
- NFPA 1500: Standard on Fire Department Occupational Safety and Health Program provides requirements for facility safety, maintenance and inspections.
- NFPA 1581: Standard on Fire Department Infection Control Program, has requirements to provide minimum criteria for infection control in the fire station, in the fire apparatus, during procedures at an incident scene, and at any other area where fire department members are involved in routine or emergency operations.
- NFPA 1851: Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, this standard provides safety requirements for storage and cleaning of personal protective equipment.
- NFPA 1989: Standard on Breathing Air Quality for Emergency Services Respiratory Protection, this standard provides requirements on the installation of SCBA filling stations.
- NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, provides requirements where communication centers are located within fire station facilities.

6.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

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

TABLE 0-3.
COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Public Protection	Yes	8	1989
Storm Ready	No		
Firewise	No		

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, the priority for each initiative and the mitigation type.

6.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Fire District may need additional collaboration in evaluation of technological hazards in its planning area. Local Emergency Management, the Fire District, and local industry can coordinate these planning efforts. Since the previous mitigation plan, there has been new industrial and residential development within this district which warrants further analysis between plan updates.

TABLE6-4.
HAZARD MITIGATION ACTION PLAN MATRIX

Initiative #-FPD3-MH1—Grant County Fire Protection District #3							
Description	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Development of fire station	Wildfire, Severe Storm	1 of 3, medium	High: High	$750,000	Operating budget, grants	2013-2018	No, replaces previous initiative
Initiative:	Relocate Trinidad Fire Station 37 – new construction						
Mitigation Type:	Emergency Services						
Rationale:	The new property owner (Grant County PUD) has plans to use this fire station in a capacity other than public safety. Relocating (reconstructing) the Trinidad Fire Station mitigates several hazards. There is a chance of flooding of the Crescent Bar area on the Columbia River where this station is located. The access issue of a single bridge crossing to the station could hamper the response in a natural hazard event. The fire district has purchased property in anticipation of relocating this station in order to give better access to the response area. It better serves this area of the fire district by housing modern apparatus and resident firefighter rooms. The area has a history of extreme wildfire issues in the Urban Interface that this new location will help to mitigate. Due to high winds in the area and potential loss of electrical power, a generator will be included with the project.						
Plan Goal(s):	Goal #1 Protect life, property, and the environment						
Plan Objectives	Objective #1 Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8 Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.						
Status Update:	New mitigation initiative, replaces snow removal plan initiative						
Initiative #-FPD3-MH2—Grant County Fire Protection District #3							
Description	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Development of fire station	Wildfire, Severe Storm	2 of 3, medium	High: High	$500,000	Operating budget, grants	2013-2018	No, replaces previous initiative
Initiative:	Construct new fire station (Station 36 Sunland Estates)						
Mitigation Type:	Emergency Services						

Rationale:	The relocation and construction of a new life safety facility will ensure that emergency services can continue during natural disasters. It benefits the community by housing modern apparatus and serving as a community facility during disaster events. This is the closest fire station to the Gorge Amphitheatre, a 22,000 seat outdoor concert facility that is vulnerable to high winds and fires. This area has several miles of Columbia River recreation that can become a serious boating hazard in high winds. Included in the project will be a generator to supply power in the event of a loss of electrical power. Property has been acquired through a donation from the Bureau of Reclamation.
Plan Goal(s):	Goal #1 Protect life, property, and the environment
Plan Objectives	Objective #1 Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8 Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.
Status Update:	New mitigation initiative, replaces backup power generator initiative

Initiative #-FPD3-MH3—Grant County Fire Protection District #3

Description	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Development of fire station	Wildfire, Severe Storm	3 of 3, medium	High: High	$500,000	Operating budget, grants	2013-2018	No, replaces previous initiative

Initiative:	Construct new fire station (Station 33 Block 71)
Mitigation Type:	Emergency Services
Rationale:	The relocation and construction of a new life safety facility will ensure that emergency services can continue during events of natural disasters. It will benefit the community by housing modern apparatus and serving as a community facility. This facility has become located in a poor place due to changes in demographics in its response area along with vulnerability to weather related issues such as wind and deep snow. The goal is to move the facility to a location closer to the population base for its response area. This will also greatly improve winter weather access by being closer to a state maintained highway. A generator for power outages will be included for severe wind related events. Property has been acquired through a donation from the Bureau of Reclamation.
Plan Goal(s):	Goal #1 Protect life, property, and the environment
Plan Objectives	Objective #1 Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8 Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.
Status Update:	New mitigation initiative, replaces backup power generator initiative

CHAPTER 7. FIRE PROTECTION DISTRICT 12 ANNEX

7.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Scott Mortimer
P.O. Box 54
Wilson Creek, WA 98860
Telephone: 509-750-5960

Alternate Point of Contact
Susan James
P.O. Box 73
Wilson Creek, WA 98860
Telephone: 509-345-2531

7.2 JURISDICTION PROFILE

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

Population Served—Rural population of 1,200 (2012)

Land Area Served— 309 square miles

Critical Infrastructure/Equipment Owned by the Jurisdiction:

The district has 4 stations and 27 pieces of apparatus.

Current and Anticipated Service Trends— Grant County Fire Protection District #12 must improve/expand fire stations to accommodate larger fire/rescue apparatus for year round service. This would improve response times in the following areas:

- Town of Krupp and Burlington Northern SantaFe main rail line in east-central Grant County.
- Pinto Ridge Road corridor/Columbia Basin Irrigation Main Canal/Summer Falls Power Plan in central Grant County.

7.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 7-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 7-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957
Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

7.4 HAZARD RISK RANKING

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

TABLE 7-2.
HAZARD RISK RANKING

Rank	Natural Hazard Type	Risk Rating Score (Probability x Impact)
1	Wildland Fire	42
2	Severe Storm	42
3	Drought	36
4	Flood	34
5	Dam Failure	6
6	Volcano	32
7	Earthquake	14
8	Landslide	6
	Technological Hazard Type	*Reserved for subsequent plan update*
1		
2		
3		
4		
5		

7.5 APPLICABLE REGULATIONS AND PLANS

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

- NFPA response times
- WSRB response times
- WSRB apparatus requirements for residential fire insurance rating
- WSRB water supply requirements for residential fire insurance rating

7.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

The jurisdiction's classifications under various hazard mitigation programs are presented in Table 7-3.

TABLE 0-3.
COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Public Protection	Y	8	2007
Storm Ready	N		
Firewise	N		

7.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 7-4 lists the initiatives that make up the jurisdiction's hazard mitigation plan, the priority for each initiative and mitigation type.

7.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Grant County Fire District 12 may need support in evaluating technological hazards within its jurisdiction. The district coordinates these and other emergency planning efforts with the Grant County Department of Emergency Management.

Table 7-4.
HAZARD MITIGATION ACTION PLAN MATRIX

Initiative #FPD12-MH1—Grant County Fire District 12							
Description	**Hazards Mitigated**	**Priority Level**	**Cost Benefit Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Development of new fire station	Severe Storm, Wildfire, Flood, Hazardous Materials	Medium (Priority 1 of 2)	High High	$80,000	Unknown	2013-2018	No
Initiative:	New station in the Pinto Ridge Road corridor. This is where Summer Falls Dam, BPA, AVISTA main power transmission lines and Main Canal of Columbia Basin Project are located.						
Mitigation Type:	Emergency Services						
Rationale:	Fire resources, including budget and apparatus are limited within this fire district due to lack of taxing allocation.						
Plan Goal(s):	Goal #1, Protect life, property and the environment Goal #2, Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters.						
Plan Objective(s):	Objective #1, Reduce hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8, Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.						
Status Update:	New mitigation action item, not included in previous plan.						

Initiative #FPD12-MH2—Grant County Fire District 12							
Description	**Hazards Mitigated**	**Priority Level**	**Cost Benefit Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Retrofit fire station	Severe Storm, Wildfire, Hazardous Materials	Medium (Priority 2 of 2)	High High	$70,000	Unknown	2013-2018	No
Initiative:	Provide updates to existing fire station in Town of Marlin (City of Krupp) where residences, BNSF main rail line and grain storage facilities are located.						
Mitigation Type:	Emergency Services						
Rationale:	Fire response capabilities are very limited in this area due to insufficient space to house necessary equipment. This is particularly true in the winter months when fire response times are severely limited due to the inability to house water tenders inside this location as there is not a municipal water supply.						
Plan Goal(s):	Goal #1, Protect life, property and the environment Goal #2, Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters.						
Plan Objective(s):	Objective #1, Reduce hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8, Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.						
Status Update:	New mitigation action item, not included in previous plan.						

CHAPTER 8. FIRE PROTECTION DISTRICT 10 ANNEX

8.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Brian Evans, Chief
336 Camelia St. NE
Royal City WA, 99357
Telephone: 509-346-2658

Alternate Point of Contact
Angie Argo, District Secretary
336 Camelia St. NE
Royal City WA, 99357
Telephone: 509-346-2658

8.2 JURISDICTION PROFILE

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

Population Served—Rural population of 4,665 (2012)

Land Area Served— 400 square miles

Critical Infrastructure/Equipment Owned by the Jurisdiction: The district has 4 stations and 31 pieces of apparatus.

Current and Anticipated Service Trends— The population within this district has increased significantly since the last version of this plan. A 52 unit apartment complex was constructed within city limits in 2009 and several new homes have been added. Additionally, there are plans underway for a larger apartment complex. The number of volunteers has been decreasing. The demographic is more than 80% Hispanic, the majority of which are non-English speaking and this poses increased challenges for public education and outreach. In a natural hazard event, a language barrier poses significant safety concerns.

8.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Past Presidential Disaster Declarations are included in Table 8-1 below. Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

TABLE 8-1.
PRESIDENTIAL DISASTER DECLARATIONS FOR HAZARD EVENTS IN GRANT COUNTY

Type of Event	Disaster Declaration #	Date
Flood	70	March 1957
Flood	146	March 1963
Drought	(WA Declared) 3037	March 1977
Volcano	623	May 1980
Ice, Wind, Snow, Landslide and Flood	1159	December 1996-February 1997
Severe Winter Storm, Wind, Landslide, Mudslide	1682	December 2006

The storm events resulting in Presidential Disaster Declaration 1682 in Washington State had an impact on the primary municipality this fire district serves, the City of Royal City and surrounding area. Wind speeds occurred at 45 mph with gusts from 63 to 135 mph over a 12 hour period. Reported damages were estimated at $3,200,000 in Grant County, a second storm caused approximately $2,000,000. Roof damages, structural collapse, downed trees, and irrigation system damages occurred within and surrounding the area the fire district serves.

The fire district regularly response to wildfires of 1,000 acres or more. The increase in population growth has outpaced the increase in the tax base. The district is not able to fund the facilities needed for this area.

Other past occurrences of natural hazards are included in the hazard profiles in Volume 1 of this plan.

8.4 HAZARD RISK RANKING

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

TABLE 8-2.
HAZARD RISK RANKING

Rank	Natural Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Storm	42
2	Earthquake	24
3	Wildfire	42
4	Landslide	12
5	Drought	36
6	Flood	12
7	Dam Failure	12
8	Volcano	32
	Technological Hazard Type	*Reserved for subsequent plan update*
1		
2		
3		
4		
5		

8.5 APPLICABLE REGULATIONS AND PLANS

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

- WSRB Classification 6 (within Royal City)
- WSRB Classification 8 (district)

- WAC 296-305

8.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

The jurisdiction's classifications under various hazard mitigation programs are presented in Table 8-3.

TABLE 8-3.
COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Public Protection	Yes	8	1997
Storm Ready	No		
Firewise	No		

8.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 8-4 lists the initiatives and priorities that make up the jurisdiction's hazard mitigation plan. Table 8-4 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

8.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Grant County Fire District 10 may need support in evaluating technological hazards within its jurisdiction. The district coordinates these and other emergency planning efforts with the Grant County Department of Emergency Management.

TABLE8-4.
HAZARD MITIGATION ACTION PLAN MATRIX

Initiative #-FPD10-MH2—Grant County Fire Protection District #10							
Description	**Hazards Mitigated**	**Priority Level**	**Benefit-Cost Ratio**	**Estimated Cost**	**Sources of Funding**	**Timeline**	**Included in Previous Plan?**
Development of fire station	Earthquake	1 of 2	High High	$1,600,000	Grants and operating budget	2013-2020	No
Initiative:	Replacement of headquarters fire station.						

Mitigation Type:	Emergency Services
Rationale:	Grant County Fire District 10 provides fire, rescue, and EMS response to 400 square miles surrounding and including the communities of Royal City, Beverly, Schwana, and Smyrna. In addition, EMS and automatic aid for fire response is provided to Grant County Fire District 11 covering an additional 120 square miles and the communities of Royal Camp and Marine View Heights. The current headquarters station was not designed or built to be a fire station. The structure does not meet current building codes, seismic codes, or WAC 296-305 requirements for fire stations and its close proximity to both the Saddle Mountains and Frenchman Hills fault lines makes it more at risk to failure as a result of an earthquake. Our members health and safety may be at risk due to the lack of lack of floor drains allowing snow melt from vehicles after responding during severe winter storms to pool on the floor, causing potential slip and electrocution hazards and soaking under walls, carpet and other building materials potentially exposing our members to mold and other toxic substances. The headquarters fire station is Fire District 10's only station that has water, sewer, full communications capabilities, and a backup power generator. If the headquarters fire station was severely damaged or destroyed as a result of a natural disaster, our ability to provide fire, rescue, and EMS response would be greatly diminished if not completely disrupted. The fire station is an essential facility and during a natural disaster, it would likely become the Emergency Operations Center for much of Southern Grant County, would be a major hub for response efforts, and could be the only communication link to the rest of the County.
Plan Goal(s):	Goal #1 Protect life, property, and the environment
Plan Objectives	Objective #1 Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area. Objective #8 Retrofit, purchase, or relocate structures in high hazard areas including those known to be repetitively damaged.
Status Update:	New initiative

Initiative #-FPD10-MH1—Grant County Fire Protection District #10

Description	Hazards Mitigated	Priority Level	Benefit-Cost Ratio	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Backup power generators	Severe Storm	2 of 2	159:1	$13,000	Completed through DHS funds	2013-2018	Yes, complete

Initiative:	Backup power generators for the Royal City Fire Station and the radio repeater on Frenchman Hills
Mitigation Type:	Emergency Services
Rationale:	During a winter storm or other hazard event, the fire district would become the center for emergency service in the surrounding area. Communications may become impossible by land line telephone or cell phone making radio communications invaluable.
Plan Goal(s):	Goal #2 Continuously build and support local capacity to enable the public to mitigate, prepare for, respond to and recover from the impact of hazards and disasters.
Plan Objectives	Objective #1 Reduce natural hazard-related risks and vulnerability to populations, critical facilities and infrastructure within the planning area.
Status Update:	Project complete.

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Hazard Mitigation Plan Update
Volume 2: Planning Partner Annexes

APPENDIX A.
PLANNING PARTNER EXPECTATIONS

December 2013

APPENDIX A.
PLANNING PARTNER EXPECTATIONS

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 ten individual plans, or one large plan that has a chapter for each partner jurisdiction, the following items must be addressed by each planning partner to achieve DMA compliance:

Participate in the process. It must be documented in the plan that each planning partner "participated" in the process that generated the plan. There is flexibility in defining "participation". Participation can vary based on the type of planning partner (i.e.: City 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.

Consistency Review. Review of existing documents pertinent to each jurisdiction to identify policies or recommendations that are not consistent with those documents reviewed in producing the "parent" plan or have policies and recommendations that complement the hazard mitigation initiatives selected (i.e.: comp plans, basin plans or hazard specific plans).

Action Review. For Plan updates, a review of the strategies from your prior action plan to determine those that have been accomplished and how they were accomplished; and why those that have not been accomplished were not completed.

Update Localized Risk Assessment. Personalize the Risk Assessment for each jurisdiction by removing hazards not associated within the defined jurisdiction's geographic area, or redefining vulnerability based on a hazard's impact to a jurisdiction. This phase will include:

- A ranking of the risk
- A description of the number and type of structures at risk
- An estimate of the potential dollar losses to vulnerable structures
- A general description of land use and development trends within the community to ensure 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.

Incorporate Public Participation. Each jurisdiction must present the plan to the public for comment at least once, within two weeks prior to adoption. This public review can also be

achieved through the Grant County Department of Emergency Management public review meetings and/or posting the plan update on the webpage.

Plan must be adopted by each jurisdiction.

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

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

A. A "Letter of Intent to participate" or Resolution to participate to the Planning Team (see exhibit A).

B. Designate a lead point of contact for this effort. This designee will be listed as the hazard mitigation point of contact for your jurisdiction in the plan.

C. Support and participate in the selection and function of the Steering Committee selected to oversee the development of this plan.

D. Provide support in the form of mailing list, possible meeting space, and public information materials, such as newsletters, newspapers or direct mailed brochures, required to implement the public involvement strategy developed by the Steering Committee.

E. Participate in the process. There will be many opportunities as this plan evolves to participate. Opportunities such as:

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

F. There will be one ***mandatory*** workshop that all planning partners will be required to attend. This workshop will cover the proper completion of the jurisdictional annex template which is the basis for each partner's jurisdictional chapter in the plan. Failure to have a representative at this workshop will disqualify the planning partner from participation in this effort. The schedule for this workshop will be such that all committed planning partners will be able to attend. The workshop can be completed within each jurisdiction on an individual basis. In the event that schedule conflicts arise, not allowing an in-person workshop, it can be completed electronically and/or via conference call.

G. After participation in the mandatory template workshop, each partner will be required to complete their template and provide it to the planning team in the time frame established by the Steering Committee. Failure to complete your template in the required time frame may lead to disqualification from the partnership.

H. Each partner will be expected to perform a "consistency review" of all technical studies, plans, and ordinances specific to the hazards to determine inconsistencies between those documents reviewed by the (local) jurisdiction and 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 the project is anticipated to occur.

L. Each partner will be required to sponsor at least one public meeting to present the draft plan to its constituents at least 2 weeks prior to adoption. This public review can also be achieved through the Grant County Department of Emergency Management public review meetings and/or posting the plan update on the webpage.

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.

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Hazard Mitigation Plan Update
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APPENDIX B.
PROCEDURES FOR LINKING TO THE HAZARD MITIGATION PLAN UPDATE

December 2013

APPENDIX B.
PROCEDURES FOR LINKING TO THE HAZARD MITIGATION PLAN UPDATE

Not all eligible local governments within Grant County are included in the Grant County Hazard Mitigation Plan Update. It is assumed that some or all of these non-participating local governments may choose to "link" to the Plan at some point to gain eligibility for programs under the federal Disaster Mitigation Act. 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

Eligible linking jurisdictions are instructed to complete ***all*** of the following procedures:

- The eligible jurisdiction requests a "Linkage Package" by contacting Grant County Department of Emergency Management for the plan:

  The linkage package will include:

  - A copy of Volume 1 and 2 of the plan (electronic or paper format).
  - Planning partner's expectations package.
  - A sample "letter of intent" to link to the Hazard Mitigation Plan Update.
  - 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 Update, 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. Technical assistance can be provided upon request by completing the request. This assistance may be provided by the point of contact at Grant County Emergency Management 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 point of contact will determine who will provide the technical assistance and the possible level of assistance 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. 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 Grant County Emergency Management for a pre-adoption review to ensure conformance with the plan format.
- The following will be reviewed:
  - 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 Update
  - A Designated point of contact
  - A ranking of risk specific to the jurisdiction.

  The point of contact 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 Washington State Military Department, Emergency Management Division.
- Plans approved and accepted by the Steering Committee will be forwarded to Washington State Military Department, Emergency Management Division 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.
- Washington Military Department Emergency Management Division reviews plans for federal compliance. Non-Compliant plans are returned to the lead agency for

correction. Compliant plans are forwarded to FEMA for review with annotation as to the adoption status.

- FEMA reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. FEMA notifies new jurisdiction of results of review with copies to Washington State Military Department, Emergency Management Division and approved planning authority.
- New jurisdiction corrects plan shortfalls (if necessary) and resubmits to the State through the approved plan lead agency.
- For plans with no shortfalls from the FEMA review that have not been adopted, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards adoption resolution to FEMA with copies to Grant County Emergency Management and the State.
- FEMA regional 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 Grant County Emergency Management 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, Grant County Emergency Management shall notify the State and FEMA in writing that the partner in question is no longer covered by the Hazard Mitigation Plan Update, 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. Each partner agreed to these terms by adopting the plan.

Eligibility status of the planning partnership will be monitored by Grant County Emergency Management. 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 Grant County Emergency Management 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 point of contact at Grant County Emergency Management 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 five attempts.
- The Steering Committee will review information provided by point of contact, 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 point of contact 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 point of contact. 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.

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APPENDIX C.
JURISDICTIONAL ANNEX INSTRUCTIONS AND TEMPLATE FOR MUNICIPALITY UPDATES

December 2013

APPENDIX C.

INSTRUCTIONS FOR COMPLETING MUNICIPALITY UPDATE ANNEX

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 for all planning partners. depending on funding availability. Any questions should be directed to:

Grant County Emergency Management
3953 Airway Dr. NE Bldg. #2
Moses Lake, WA 98837
(509) 762-1462
e-mail: gcem@co.grant.wa.us

CHAPTER NUMBER AND TITLE

In the chapter title at the top of Page 1, type in the complete official name of your jurisdiction.

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, 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. In addition, designate an alternate point of contact.

JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated. 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

The first table in each chapter lists previous Presidential Disaster Declarations for Grant County. It is suggested to include natural hazard events that have caused damage in your jurisdiction since 1975. Sources of this information may 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. There were no repetitive loss properties identified in Grant County through the plan update process.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section. 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 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. 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 a damaging flood in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category.

- 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)

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. Impact factors are:

- 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)

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 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)

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)

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.

Complete Risk Ranking in Template

Complete Table X-2 in your template. The hazard with the highest risk rating should be listed at the top and given a rank of 1 and so on. However, 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 that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in 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.

Sample Risk Rating					
Natural Hazard Event	**Probability Factor**	**Impact: People (weight x3)**	**Impact: Property (weight x2)**	**Impact: Economy (weight x1)**	**Risk Rating (max score = 54)**
Dam Failure	Med 2	1 x 3 = 3	2	1	**12**
Drought	High 3	3	3 x 2 = 6	3 x 1 = 3	**36**
Earthquake	Med 2	3	2	2	**14**
Flood	High 3	3	2	1	**18**
Landslide	Low 1	3	2	1	**6**
Severe Weather	High 3	2x3 = 6	6	2	**42**
Volcano	Med 2	3x3 = 9	6	1	**32**
Wildfire	High 3	3	6	2	**33**

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-3 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-3 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-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 official name of municipality.
- Give the initiative a one sentence description.
- Identify hazard(s) the initiative will mitigate.
- Identify the priority level of initiative (low, medium, high). Prioritize number of initiatives (1 of 1, 1 of 2, 1 of 3, etc.).
- Identify cost/benefit status (ratio used from previous mitigation plan or qualitative assessment identified by plan update).
- Identify estimated cost.
- Identify potential sources of funding, if known.
- Identify timeline. Timeline can be within or beyond five year update cycle.
- Identify if the iniative was included in previous version of mitigation plan and give a status update in the status update row.
- Describe the initiative in greater detail, but no more than one paragraph.
- Identify the mitigation type(s), described in “Analysis of Mitigation Actions" section below.
- Explain the rationale for the mitigation initiative.
- Identify by number the mitigation plan goals and objectives that the initiative addresses.
- Technical assistance will be available to your jurisdiction in completing this section during the technical assistance visit.

Prioritization of Mitigation Initiatives and Cost/Benefit Analysis:

New initiatives will use the following process. Initiatives from the previous version of the mitigation plan use the former process. Technical assistance is available.

- 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 such.

This will be expressed as a qualitative ratio: Benefit/Cost, ex. High/High, High/Medium, etc.

- 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

The following are the six types of mitigation for the hazard(s) of concern you have selected.

- 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.

STATUS OF PREVIOUS PLAN INITIATIVES

If your mitigation initiative was included in the previous plan, indicate 'yes' in this cell. If the initiative has been modified (such as it is partially complete or something within the initiative has changed or been improved, state 'yes, modified' in this cell). In the status update row, provide a brief report of actions, changes, etc. in your previous hazard mitigation initiatives. If a new initiative replaces a previous initiative, also note this here. You must be able to reconcile your original action plan to meet FEMA requirements for plan updates.

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. If nothing more is needed here, this section may be deleted.

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

December 2013

APPENDIX D.

INSTRUCTIONS FOR COMPLETING SPECIAL-PURPOSE DISTRICT ANNEX

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 for all planning partners depending on funding availability. Any questions on completing the template should be directed to:

Grant County Emergency Management
3953 Airway Dr. NE Bldg. #2
Moses Lake, WA 98837
(509) 762-1462
email: gcem@co.grant.wa.us

CHAPTER NUMBER AND TITLE

In the chapter title at the top of Page 1, type in the complete official name of your jurisdiction.

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, 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. In addition, designate an alternate point of contact.

JURISDICTION PROFILE

Narrative Profile

Please provide a brief summary to profile your jurisdiction.

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.
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction—**List all infrastructure and equipment that is critical to your jurisdiction's operations in a natural hazard event.

  - Fire Districts—This is the equipment that is essential for you to provide services 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.
  - Public Utility Districts—Miles of power line (above ground and underground), generators, power generating sub-stations, miles of pipeline, etc.
  - 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).
- **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. For example, a Fire District might consider growth percentages and call volume increases. A Water District might consider including increased housing units in its service area, representing and expansion of the district's delivery network.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

The first table in each jurisdictional chapter lists previous Presidential Disaster Declarations for Grant County. It is suggested to include natural hazard events that have caused damage in your jurisdiction since 1975. Sources of this information may 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.

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 operations. 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.

- 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)

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. 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)

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.

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)

Impacts on the Jurisdiction's Operations/Economy

Impact on operations is assessed based on estimates of ***how long it will take your jurisdiction to become 100-percent functional*** after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. 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)

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, calculate a risk rating for each hazard of concern.

Complete Risk Ranking in Template

Complete Table X-2 in your template. The hazard with the highest risk rating should be listed at the top and given a rank of 1 and so on. However, 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 that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in 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.

Sample Risk Rating					
Natural Hazard Event	**Probability Factor**	**Impact: People (weight x3)**	**Impact: Property (weight x2)**	**Impact: Economy (weight x1)**	**Risk Rating (max score = 54)**
Dam Failure	Med 2	1 x 3 = 3	2	1	**12**
Drought	High 3	3	3 x 2 = 6	3 x 1 = 3	**36**
Earthquake	Med 2	3	2	2	**14**
Flood	High 3	3	2	1	**18**
Landslide	Low 1	3	2	1	**6**
Severe Weather	High 3	2x3 = 6	6	2	**42**
Volcano	Med 2	3x3 = 9	6	1	**32**
Wildfire	High 3	3	6	2	**33**

APPLICABLE REGULATIONS AND PLANS

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 official name of special purpose district.
- Give the initiative a one sentence description.
- Identify hazard(s) the initiative will mitigate.
- Identify the priority level of initiative (low, medium, high). Prioritize number of initiatives (1 of 1, 1 of 2, 1 of 3, etc.).
- Identify cost/benefit status (ratio used from previous mitigation plan or qualitative assessment identified by plan update).
- Identify estimated cost.
- Identify potential sources of funding, if known.
- Identify timeline. Timeline can be within or beyond five year update cycle.
- Identify if the iniative was included in previous version of mitigation plan and give a status update in the status update row.
- Describe the initiative in greater detail, but no more than one paragraph.
- Identify the mitigation type(s), described in “Analysis of Mitigation Actions" section below.
- Explain the rationale for the mitigation initiative.
- Identify by number the mitigation plan goals and objectives that the initiative addresses.

Technical assistance will be available to your jurisdiction in completing this section.

Prioritization of Mitigation Initiatives and Cost/Benefit Analysis:

New initiatives will use the following process. Initiatives from the previous version of the mitigation plan use the former process unless otherwise indicated. Technical assistance is available.

- 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 such.

  The benefit/cost will be expressed as a qualitative ratio: Benefit/Cost, ex. High/High, High/Medium, etc.

- 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

The following are the six types of mitigation for the hazard(s) of concern you have selected.

- 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 storm water 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. If nothing more is needed here, this section may be deleted.