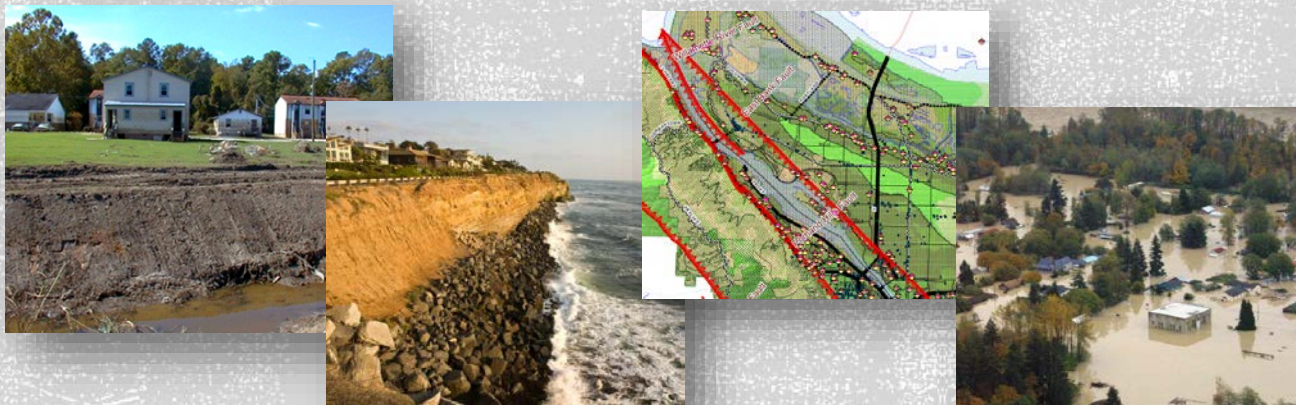


Developing an Effective Mitigation Strategy



FEMA Region 10 Mitigation Planning Program Coffee Break Webinar Series

July 28, 2017

Brett Holt, FEMA Region 10 Mitigation Planning Program Manager

Amanda Siok, FEMA Region 10 Mitigation Planner

Patty Perry, Confederated Tribes of the Umatilla Indian Reservation, Senior Planner

Greg Adams, Teton County, Emergency Management Coordinator





At the end of this webinar, participants will be able to:

1. Understand connection between risk assessment, capability assessment, and developing actions
2. Identify mitigation strategies to address community vulnerabilities
3. Evaluate and prioritize actions based on specified criteria
4. Develop an implementable action plan

Objectives



Mitigation

Mitigation is the reduction or elimination of long-term risk to human life and property from hazards



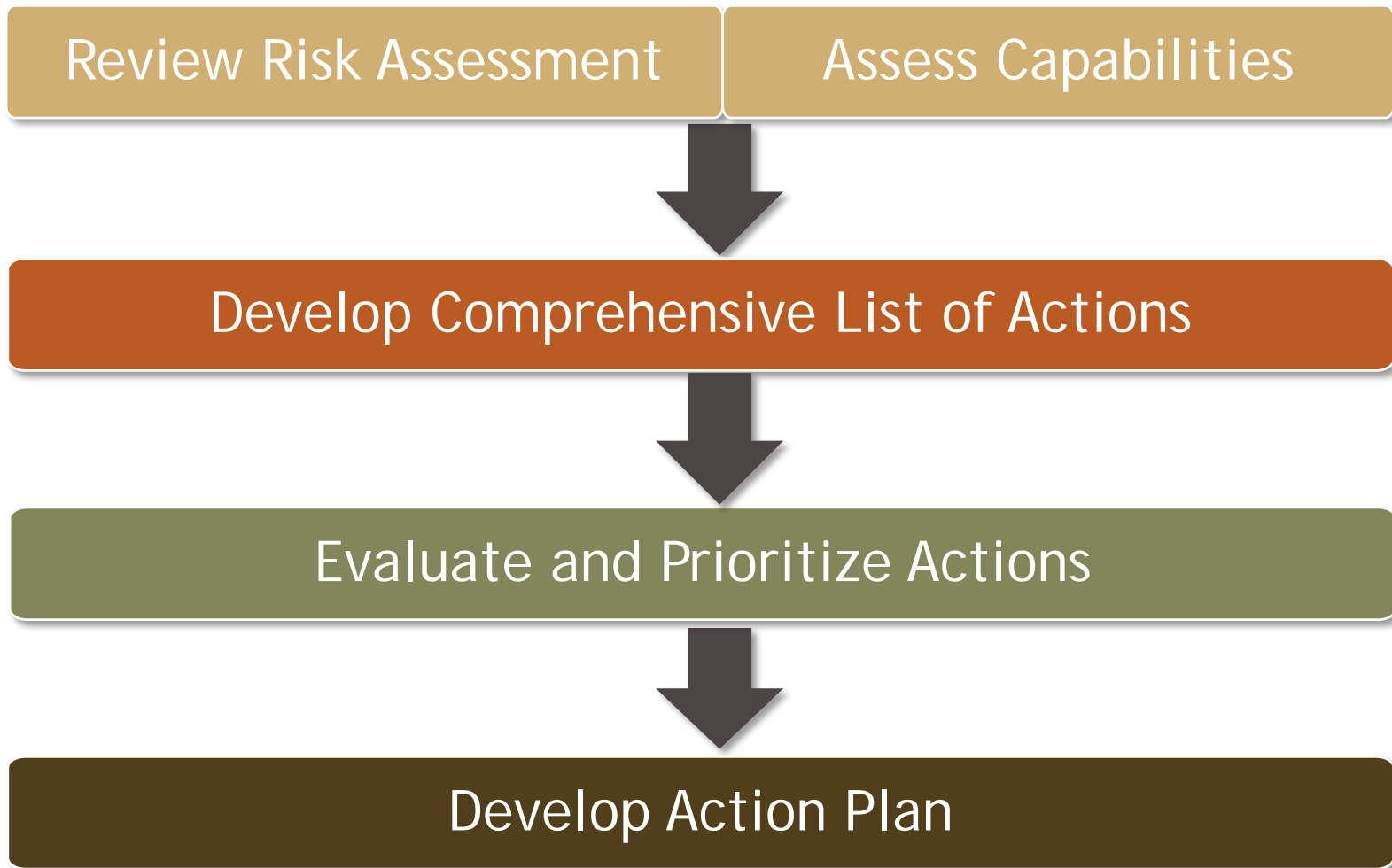
Emergency Management Activities

Mitigation Increases Resiliency





Strategy Development Process



Strategy Planning Requirements



1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs? *44 CFR 201.6(c)(3)*
2. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? *44 CFR 201.6(c)(3)(i)*
3. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? *44 CFR 201.6(c)(3)(ii) and 44 CFR 201.6(c)(3)(iv)*
4. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? *44 CFR 201.6(c)(3)(iii) and 44 CFR (c)(3)(iv)*
5. Was the plan revised to reflect progress in local mitigation efforts? *44 CFR 201.6(d)(3)*

Local Mitigation Plan Review Guide

October 1, 2011



Tribal Multi-Hazard Mitigation Planning Guidance

March 2010



Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SE
Washington, DC 20472

Remember....

- Each jurisdiction will go through this process
- Each jurisdiction will identify actions based on their hazards
- Each jurisdiction will have their own set of strategies
- Each jurisdiction will identify their primary lead agency/department



Review Risk Assessment

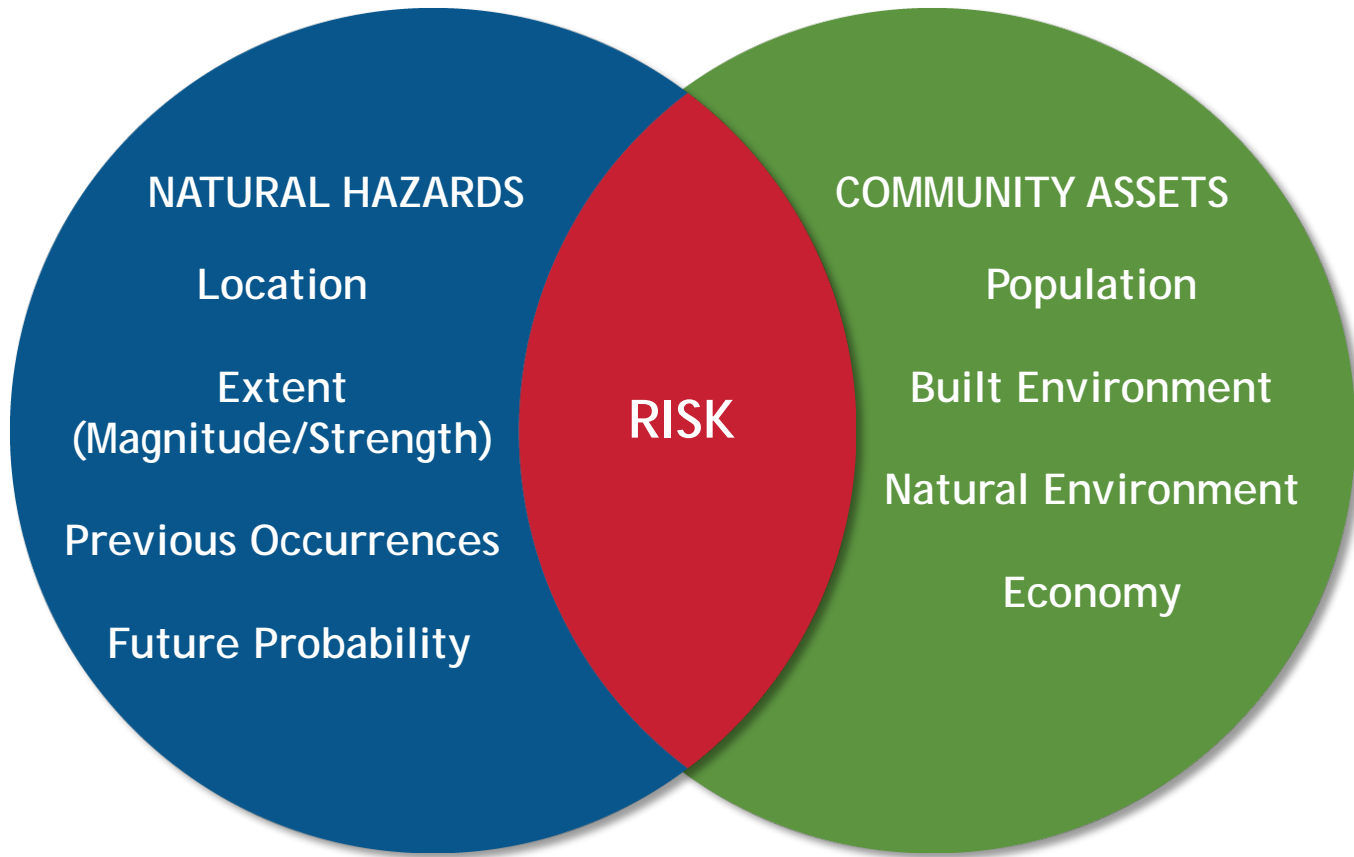
Assess Capabilities

Develop Comprehensive List of Actions

Evaluate and Prioritize Actions

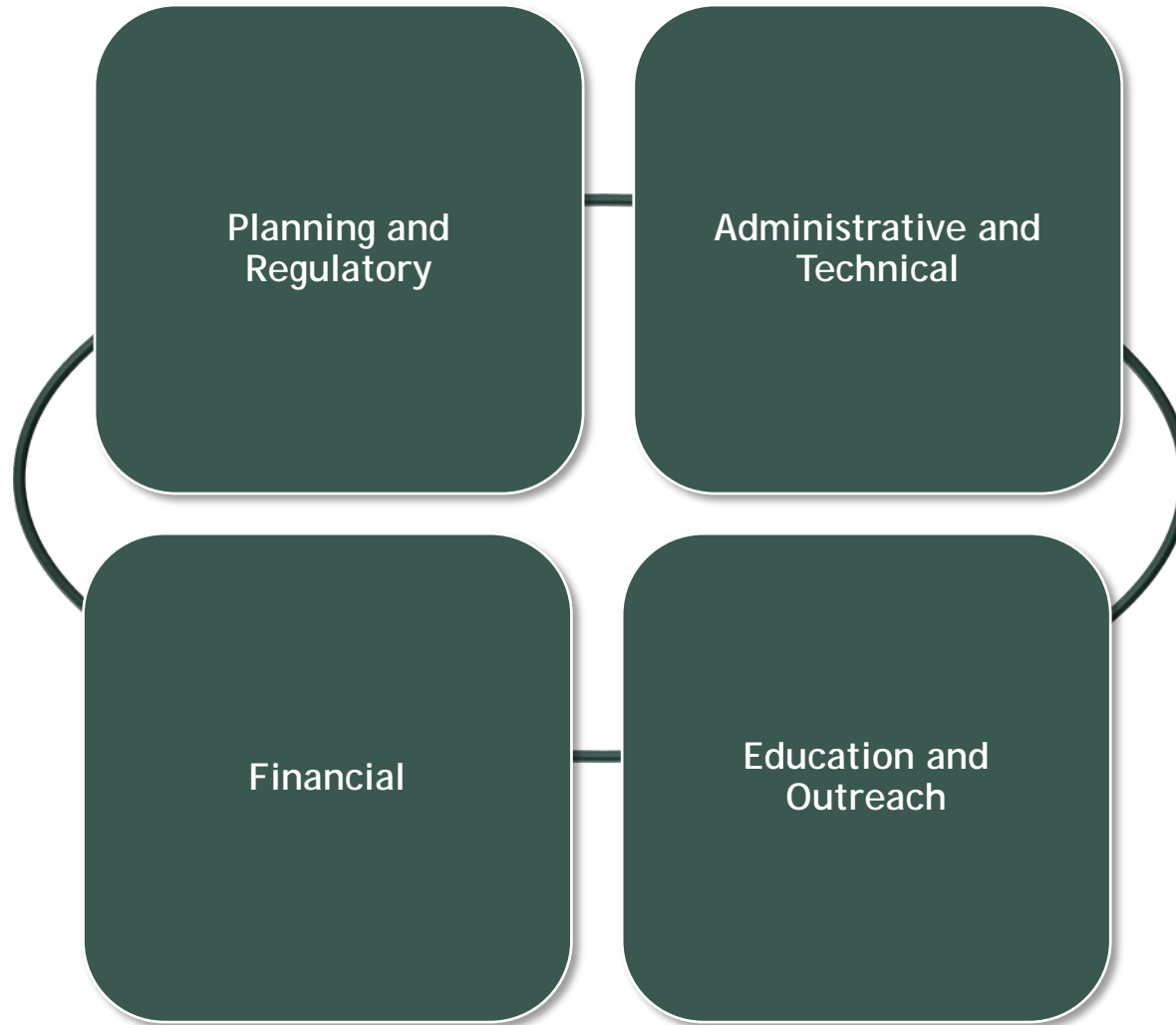
Develop Action Plan

Review Your Risk Assessment



Note: Adapted from U.S. Geological Survey and Oregon Partnership for Disaster Resilience Models

Assess Your Capabilities



Summarize Vulnerability Problem Statement

Develop problem or issue statements for each hazard to summarize vulnerability

Key Parts

- Pertain to individual jurisdictions or to the entire planning area
- Pertain to specific community assets or hazards
- Based on results of the risk assessment
- Identify key issues or problems
- Not overly technical
- Clear, concise



Example:

“In wildland-urban interface areas, two critical facilities (Eagle High School and county public works maintenance shop) with a total of \$500 million in property value are at risk, and there is increasing development pressure.”

Example: Problem Statements

- “Smith School, located in Aumville, is in a low lying area that is flooded frequently by the Elk River causing disruptions for students.”
- “The North Creek Sewage Treatment Plant is located in the 100-year floodplain along Sky River and has been damaged 4 times in the past 10 years.”
- “Residents of the Village describe ground failure impacts such as 8 homes and 2 critical facilities sinking on their pilings, particularly in the downtown ‘old town’ area.”
- “Approximately 93 percent of the buildings in the floodplain were built before freeboard requirements were in place (1996).”
- “Renter occupied housing rates greater than a percent or two above the city-wide rates are found in the Central City (75 percent) and Northeast Coalition (75 percent), which are areas of high landslide risk.”

Review Risk Assessment

Assess Capabilities

Develop Comprehensive List of Actions

Evaluate and Prioritize Actions

Develop Action Plan

Comprehensive Range of Mitigation Actions



Each jurisdiction must:



- Identify and analyze a comprehensive range of specific mitigation actions to reduce the impacts of hazards identified in the risk assessment
- Consider actions that reduce risk to:
 - Existing buildings and infrastructure
 - New development and redevelopment

Consider the following:

1. Based on your risk assessment, just make a list of all possible actions to consider
2. Don't worry about priorities at this point in the process
3. Each participating jurisdiction must identify a range of actions to consider for each identified natural hazard

Mitigation Action Categories

Local Plans and
Regulations

Structure and
Infrastructure
Projects

Natural Systems
Protection

Education and
Awareness
Programs

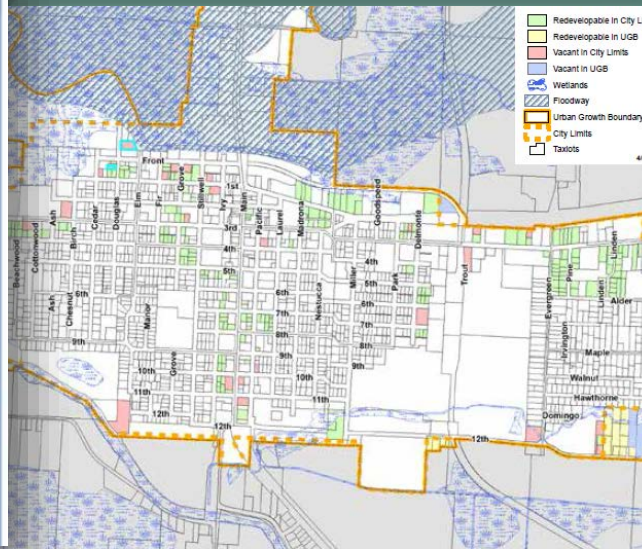
Examples of Mitigation Actions: Local Plans and Regulations

Update
comprehensive plan

Kittitas County
Comprehensive Plan
December 2016



Revise
zoning ordinance



Enforce building code



Examples of Mitigation Actions: Structure and Infrastructure Projects

Construct
fire resistant roofs



Improve drainage
to reduce
flood threat



Acquire and demolish
structures in
hazard-prone areas





Examples of Mitigation Actions: Natural Systems Protection



Implement erosion
control measures



Create defensible
space regulations



Protect and preserve
natural areas

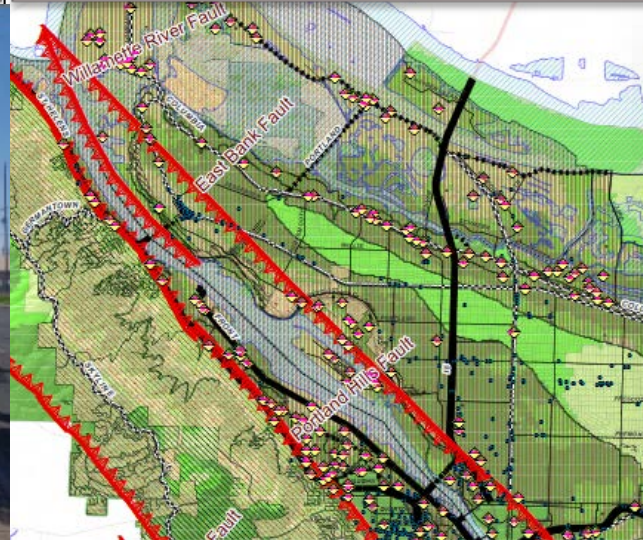


Examples of Mitigation Actions: Education and Awareness Programs

Incentivize drought tolerant landscaping



Publish Web sites and maps

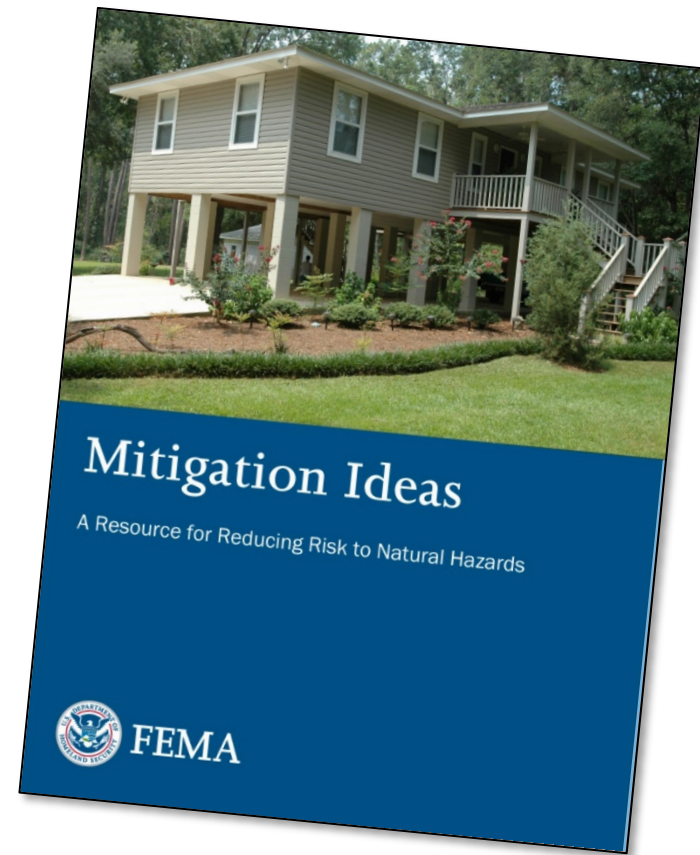


Educate the public about risks



Ideas for Mitigation Actions

- “Mitigation Ideas” Manual
- Risk MAP Reports (e.g. Risk Report)
- Subject matter experts
- Stakeholders
- Public
- Neighboring or similar communities hazard mitigation plans
- Other local plans (e.g. Community Wildfire Protection Plan, Climate Adaptation Plan)
- State Hazard Mitigation Plan



Example: Comprehensive Range of Actions

Problem Statement: “In wildland-urban interface areas, two critical facilities (Eagle School and county public works maintenance shop) with a total of \$500 million in property value are at risk, and there is increasing development pressure.”



Adopt a wildfire mitigation code



Retrofit school and maintenance shop with fire-resistant materials



Identify land for acquisition by Parks Department for trails and open space



Implement Firewise programs to educate property owners

City of Portland, Oregon

Mitigation Ideas Resource Guide

FLOOD

	Hazard Category			
	FLOOD			
Risk Reduction Measures	Manipulate Hazard	Reduce Exposure	Reduce Vulnerability	Increase Capability
Public (Individual) Scale	<ul style="list-style-type: none"> Clear <u>stormwater</u> drains and culverts 	<ul style="list-style-type: none"> Locate outside of hazard area Elevate utilities above Base Flood Elevation (BFE) Institute low impact development techniques on property 	<ul style="list-style-type: none"> Retrofit structure (elevate house above BFE) Elevate items within house above BFE Build new homes above BFE <u>Floodproof</u> non-residential structures 	<ul style="list-style-type: none"> Comply with National Flood Insurance Program (NFIP) Purchase flood insurance
Private (Business) Scale	<ul style="list-style-type: none"> Clear <u>stormwater</u> drains and culverts 	<ul style="list-style-type: none"> Locate business critical facilities or functions outside hazard area Institute low impact development techniques on property 	<ul style="list-style-type: none"> Build redundancy for critical functions/ retrofit critical buildings Provide flood-proofing measures when new critical infrastructure must be located in floodplains 	<ul style="list-style-type: none"> Increase capability by having cash reserves for reconstruction Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones Solicit 'cost-sharing' through partnerships with public sector stakeholders on projects with multiple benefits
Government Scale	<ul style="list-style-type: none"> Develop an adopt a "<u>stormdrain</u>" program Dredge, construct levees, provide retention areas Invest in structural flood control: levees, dams, channelization, revetments 	<ul style="list-style-type: none"> Acquire or relocate identified repetitive loss properties Adopt land development techniques such as density transfers or clustering Institute low impact development techniques on property 	<ul style="list-style-type: none"> Adopt appropriate regulatory standards such as cumulative substantial improvement/damage, freeboard, lower substantial damage threshold, compensatory storage Develop and implement <u>stormwater</u> management regulations and master planning Adopt "no-adverse impact" floodplain management policies that strive to not increase the flood risk on down-stream communities Perform regular inspections/assessments of locally 	<ul style="list-style-type: none"> Join Community Rating System (CRS) program or maintain/improve class Provide training for staff and decision-makers in floodplain management (e.g. maintain certified floodplain managers on staff) Create a building and elevation inventory of structures in the floodplain Develop a Flood Task Force <u>Prestage</u> flood response equipment before events

Polling Question #1

Of the four mitigation action category types, which is most effective in your community or tribe?

1. Local Plans and Regulations
2. Structure and Infrastructure Projects
3. Natural Systems Protection
4. Education and Awareness Programs

Review Risk Assessment

Assess Capabilities

Develop Comprehensive List of Actions

Evaluate and Prioritize Actions

Develop Action Plan

Action Prioritization

- Consider all identified actions and prioritize based on a process
- Consider grouping in categories of “High” “Medium” “Low” rather than numerical
- Weighs the pros and cons
- Evaluate the potential benefits and/or likelihood of successful implementation
- Planning team will need to review community capability assessment



Evaluation Criteria

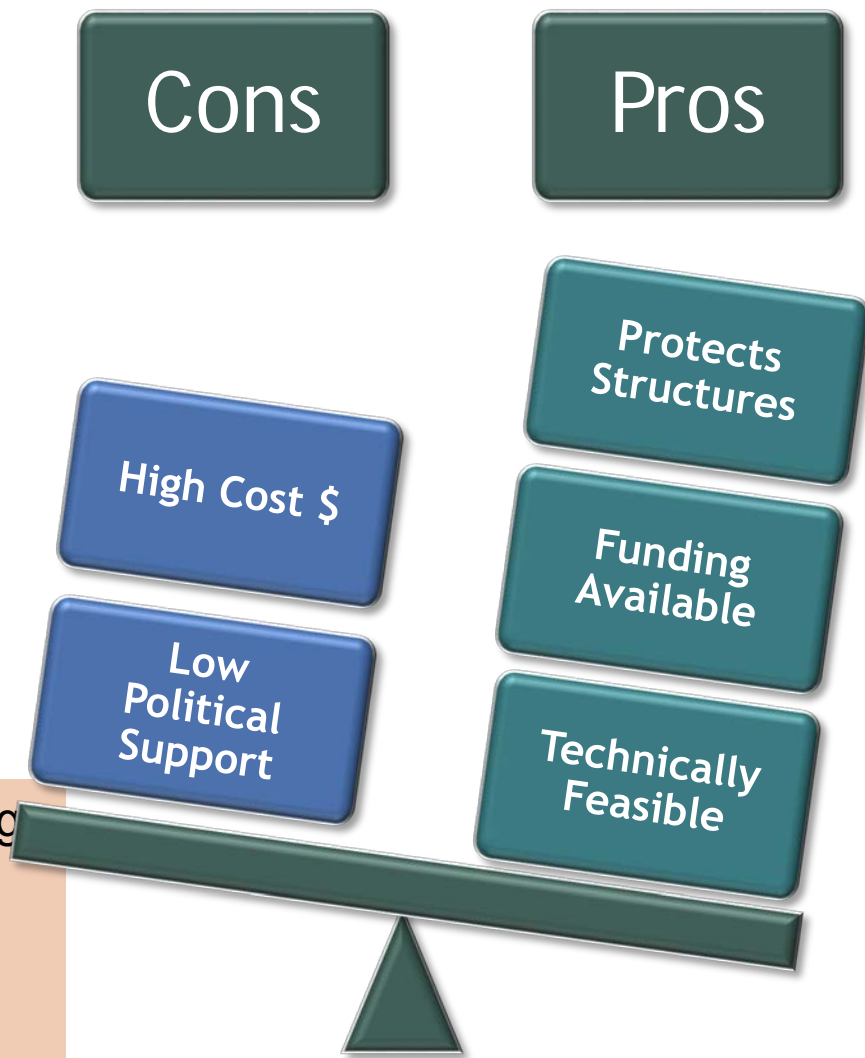
1. Technical
2. Political
3. Legal
4. Environmental
5. Social
6. Administrative
7. Local champion
8. Protects lives
9. Meets multiple community objectives

Rank each of the criteria with a -1, 0 or 1 using the following scale:

1= Highly effective or feasible

0=Neutral

-1=Ineffective or not feasible



Example: Evaluation and Prioritization

“In wildland-urban interface areas, two critical facilities (Eagle School and county public works maintenance shop) with a total of \$500 million in property value are at risk, and there is increasing development pressure.”

Mitigation Action	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
Local Plans and Regulations									
Adopt a wildfire mitigation code	+1	0	+1	+1	-1	+1	+1	0	4
Structure and Infrastructure Projects									
Retrofit school and maintenance shop with fire-resistant materials	+1	+1	+1	0	+1	+1	0	0	5
Natural Systems Protection									
Identify land for acquisition by Parks Department for trails and open space	+1	0	0	+1	-1	-1	+1	+1	2
Education and Awareness Programs									
Implement Firewise programs to educate property owners	+1	+1	+1	0	-1	-1	-1	+1	1

Worksheet 6.1

Mitigation Action Evaluation Worksheet

[illegible]

Evaluation Worksheet



Local Mitigation Planning Handbook

March 2013



Procedural

Distributive

Structural

Programs/ Services

- ✓ How was the target audience included in the design of the program?
- ✓ What actions will be taken to ensure that services and programs are physically and programmatically accessible and inclusive?
- ✓ What are the criteria for participation or receipt of benefits?

- ✓ Is the program or service designed to meet the needs of underserved and underrepresented communities? If not what would need to be changed to ensure their equitable participation?
- ✓ How will program dollars be allocated to ensure inclusive and accessible service delivery?
- ✓ Does the cost structure of

- ✓ Does this program/service create unintended consequences for communities that are underserved and underrepresented? How will they be mitigated?
- ✓ Is there an opportunity to extend additional benefits through this program/service that can help support the healing of past harms to

City of Portland, Oregon

Equity Analysis Screening Tool

Capit Invest

Regulation

- ✓ Has analysis been done on the impacts to communities of color, people with disabilities, low-income populations, seniors, children, renters, and other historically underserved or excluded groups?
- ✓ How will impacted communities be able to learn about and understand changes with the regulation?
- ✓ How will the regulation be enforced?

- ✓ Will the regulation provide improved safety, health, access or opportunity for the communities who need it most?
- ✓ How will the regulation alleviate any cost-burden for those who are already in a position where it is difficult to pay?

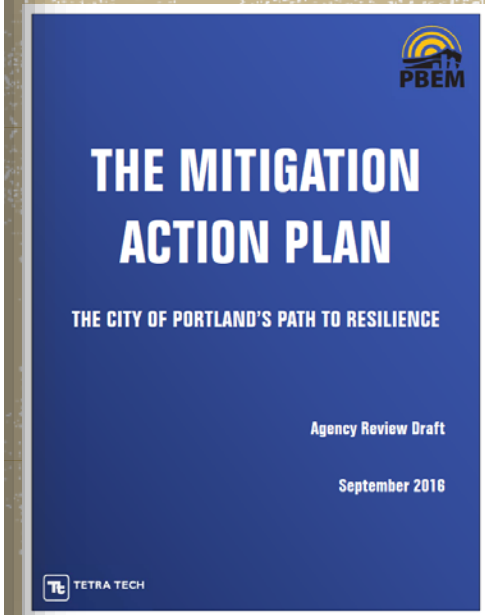
- ✓ Does the regulation create or inhibit opportunity for communities of color, people with disabilities, and low-income populations?
- ✓ Will enforcement disproportionately negatively affect low-income communities or communities of color? How will this be mitigated?

Planning

- ✓ How will impacted communities be involved in the planning process?
- ✓ What measures will be taken to ensure the process is fair and inclusive?

- ✓ How does the plan prioritize and address the needs of the most impacted or vulnerable in the community?
- ✓ Does the plan improve safety, health, access or opportunity for the communities who need it most?
- ✓ How will resources shift to ensure equitable implementation of the plan?

- ✓ What measures will be taken to mitigate the potential impacts involuntary displacement?
- ✓ How will policies support community development?
- ✓ What support is needed to build the community's ownership and self-determination with the plan?



Review Risk Assessment

Assess Capabilities

Develop Comprehensive List of Actions

Evaluate and Prioritize Actions

Develop Action Plan

Action Plan



For each action, the following must be identified:

1. Position, office, department, or agency
2. Potential funding sources
3. Expected timeframe for completion



Each jurisdiction must have at least one action to address each identified hazard in their jurisdiction

Consider the following when developing an Action Plan:

- Creating action forms (1-pager), rather than just tables, or do both
 - Action Form allow jurisdictions to easily communicate individual projects
 - Table does allow for sorting
- Identify only one lead agency, but consider many supporting agencies
- Ensure that identified lead agencies are part of the planning team or are participating stakeholder
- Identify timeframe by 'year' (e.g. 2020) rather than time period (e.g. 2-5 years); strongly discourage the use of 'ongoing'

Funding Sources

Consider the following when identifying funding sources

- Be specific with funding sources; state 'FEMA Pre-Disaster Mitigation Grant' rather than 'FEMA' or 'Washington Dept. of Ecology Floodplains by Design Grant' rather than WA Dept. of Ecology.
- When identifying sources, look at how often they are available, when to apply, eligible project types



Mitigation Funding

- Pre-Disaster Mitigation Grant and Flood Mitigation Assistance Grant opens August 14 to November 14, 2017
- Review other local or tribal mitigation plans for sources
- All state hazard mitigation plans have a section on funding sources
- Contact the State Hazard Mitigation Officer (SHMO)

Example: Action Form

“In wildland-urban interface areas, two critical facilities (Eagle High School and county public works maintenance shop) with a total of \$500 million in property value are at risk, and there is increasing development pressure.”

Mitigation Action	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
Local Plans and Regulations									
Adopt a wildfire mitigation code	+1	0	+1	+1	-1	+1	+1	0	4
Structure and Infrastructure Projects									
Retrofit school and maintenance shop with fire-resistant materials	+1	+1	+1	0	+1	+1	0	0	5
Natural Systems Protection									
Identify land for acquisition by Parks Department for trails and open space	+1	0	0	+1	-1	-1	+1	+1	2
Education and Awareness Programs									
Implement Firewise programs to educate property owners	+1	+1	+1	0	-1	-1	-1	+1	1

Example: Action Form

Jurisdiction:	Rock City
Mitigation Action/Project Title:	Retrofit public works maintenance shop with fire-resistant materials
Background/Issue:	In wildland-urban interface areas, two critical facilities (Eagle High School and county public works maintenance shop) with a total of \$500 million in property value are at risk
Responsible Agency:	County Public Works
Partners:	County Building Department; County Emergency Management
Potential Funding:	General funds; FEMA Pre-Disaster Mitigation Grant (PDM)
Cost Estimate:	\$125,000
Timeline:	2019
Priority:	High
Worksheet Completed by:	B. Holt (Public Works)

Proposed Action Item Identification:

EQ-LT Action 9.1: Objective 9: Develop partnerships with external partners to implement hazard-specific mitigation projects in the City.

Proposed Action Title/Description:

Develop a non-structural retrofit program aimed at making child care facilities and schools, city offices and local businesses more resistant to the impact of an earthquake.

Rationale for Proposed Action:

- Assisting schools and childcare facilities to develop vulnerability assessments and mitigation projects for tier facilities can improve the safety of the children using the facilities and mitigate the effect that a natural hazard would have on the City.
- Vulnerability assessments and mitigation projects can assist in reducing the City's overall earthquake risk.
- Non-structural retrofits will reduce or eliminate injuries to children if an earthquake occurs.

Ideas for Implementation:

- Develop a list of all K-12 schools, childcare facilities, and other schools within the City of Albany.
- Determine if any schools have already had their seismic vulnerability analyzed.
- For facilities which have had an assessment, find out when the assessment was done to determine if a new assessment should be completed to address new seismic standards.
- For facilities which have had no seismic vulnerability analysis completed, work with each facility to perform an analysis.
- Use vulnerability assessments to identify mitigation projects.
- Create programs to cover the costs of the projects or to cost-share the costs of the projects with facilities (i.e. the City pays for 75% and the facility pays for 25% of identified projects).

Lead Organization:

Emergency Management

Internal Partners:

PIO, Fire Department, Building Department

External Partners:

GAPS, State of Oregon, Linn & Benton Counties' Emergency Management, Local Red Cross, OEM, FEMA, Private schools and childcare facilities

Timeline:

Short Term (0-2 yrs)

Long Term (2-5 or more yrs)

2 – 5 years

If available, estimated cost:**Status**

Continued: No work has been done on this action.

City of Albany, Oregon

Action Form



City of Albany, Oregon
Natural Hazard Mitigation Plan

Final Report for:
Albany City Council

Prepared by:
Emergency Management
Albany Fire Department
John Brackner
P.O. Box 400
Albany, Oregon 97321
Phone: (541) 917-7701

January 2016





City of Albany, Oregon

Spreadsheet



City of Albany, Oregon Natural Hazard Mitigation Plan

Final Report for:
Albany City Council

Prepared by:
Emergency Management
Albany Fire Department
John Bradlee
P.O. Box 400
Albany, Oregon 97321
Phone: (541) 917-7701

January 2016

Lead Organization	Action	Type of Hazard	Objective	Term	Time Line	Internal/External Partners
Emergency Management	1.1 As the City of Albany's Strategic Plan is updated, incorporate and link the Natural Hazard Mitigation Plan objectives into the Strategic Plan.	Multi-Hazard (MH)	#1 – Establish and maintain methods to ensure plan implementation.	LT	2 – 5 yrs	Steering Committee
City PIO	2.1 Develop and implement six communication and outreach opportunities to inform the community of the status of the Natural Hazard Mitigation Plan.	Multi-Hazard (MH)	#2 – Provide leadership to promote, communicate, and support disaster safety messages and activities.	LT	2 – 5 yrs	All Departments
Fire Department	2.2 Develop and implement a public education strategy for those households within identified high-risk areas in the City of Albany and contract rural fire districts.	Wildfire (WF)	#2 – Provide leadership to promote, communicate, and support disaster safety messages and activities.	LT	2 – 5 yrs	Emergency Management, Linn & Benton Counties
Emergency Management	2.3 Update emergency notification procedures for ash fall events	Volcano (VO)	#2 – Provide leadership to promote, communicate, and support disaster safety messages and activities.	LT	2 – 5 yrs	All Departments
Emergency Management	3.1 Provide NHMP awareness training to City Staff to incorporate NHMP aspects into their daily work.	Multi-Hazard (MH)	#3 – Incorporate mitigation into planning and policy development.	LT	2 – 5 yrs	All Departments
Community Development	3.2 Evaluate what can be done to improve the City's current rating in the National Flood Insurance Program's Community Rating System.	Flood (FL)	#3 – Incorporate mitigation into planning and policy development.	ST	1 – 2 yrs	All Departments
Community Development	3.3 Look at the need to update applicable city codes to reduce risk and prevent flood impacts.	Flood (FL)	#3 – Incorporate mitigation into planning and policy development.	LT	2 – 5 yrs	All Departments

Mitigation Action: Wildfire #2

(What do we want to do?)

Alignment with Plan Goals:

High Priority
Action Item?

Encourage creation and adoption of wildland-urban interface maps to direct development requirements that assist wildfire mitigation.

- ☐ 1 ☒ 2 ☐ 3 ☐ 4
☐ 5 ☐ 6 ☐ 7 ☒ 8
☐ 9 ☒ 10 ☐ 11

☒ Yes**Alignment with Existing Plans/Policies:**

City of Bend EOP (2009), Greater Bend CWPP (2011)

Rationale for Proposal (Why is this important?):

HB 3623, encouraging the amendment to create inventories that expand beyond private lots development – i.e., Wildfire boundaries may be more expansive and not a clean line.

Ideas for Implementation (How will it get done?):**Action Status Report**

Incorporate this work as a task in the next Community Wildfire Protection Plan for Bend (update 2011 CWPP)

Added in 2015

Champion/
Responsible Organization:

Growth Management

Internal Partners:**External Partners:**

Fire Department, Community Development,
Information Technology (GIS)

Deschutes County Forester, Project Wildfire, Deschutes
County Community Development, Deschutes County
Emergency Services, Deschutes County 911

Potential Funding Sources:**Estimated cost:****Timeline:**

Local Funding Resources, Project Wildfire,
Greater Bend CWPP

- ☐ Ongoing
☒ Short Term (1-2 years)
☐ Long-Term (3-5 years)

Form Submitted by:

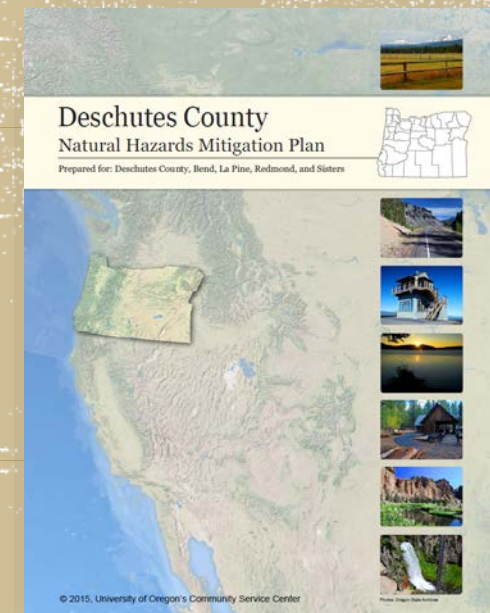
2015 NHMP Committee

Action Item Status:

New

Deschutes County, Oregon

Action Form



Mitigation Action Implementation Worksheet

Complete a mitigation action implementation worksheet for each identified mitigation action.

Jurisdiction:	
Mitigation Action/Project Title:	
Background/Issue:	
Ideas for Integration:	
Responsible Agency:	
Partners:	
Potential Funding:	
Cost Estimate:	
Benefits: (Losses Avoided)	
Timeline:	
Priority:	
Worksheet Completed by:	(Name/Department)

Action Worksheet



Local Mitigation Planning Handbook

March 2013



Poll Question #2

Based on the following evaluation criteria, which category do you feel most influences whether an action is implemented?

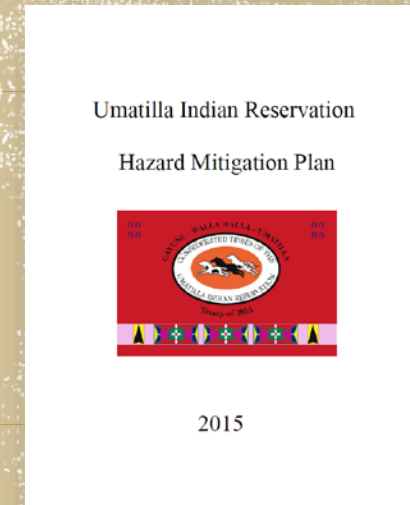
1. Technical
2. Political
3. Legal
4. Environmental
5. Social
6. Administrative
7. Local champion
8. Protect lives
9. Meets multiple community objectives

- CTUIR- Cayuse, Umatilla, Walla Walla (NE Oregon)
- NFIP since 2011
- First Hazard Mitigation Plan 2009, updated 2016
- HM Steering Committee (12 members)

Confederated Tribes of the Umatilla Indian Reservation, Oregon

Patty Perry

Senior Planner



Review Previous Strategies

FORM 1: Benefit – Cost Assessment

Measure/Action	Estimated Benefits				Estimated Cost				B > C
PE-1: INFORMATION.	Prevents or Reduces:								
	- Injury or Loss of Life	Very High	5		< \$10,000	Very Low	5		Yes
	- Displacement Costs	High	4		\$10,000 to \$25,000	Low	4		
	- Disruption Costs	Medium	3		\$25,001 to \$100,000	Medium	3		
	- Loss of Service	Low	2		\$100,001 to \$ 250,000	High	2		
	- Business Closure	Very Low	1		> \$250,000	Very High	1		No
	- Bridge/Road Closure								
	- Recovery Costs								
	- Replacement Costs								

- HMSC reviewed measures from 2009 plan; added, eliminated completed
- 2-step process using a scoring format

Prioritization

FORM 2: MITIGATION ACTION ITEM PRIORITIZATION

	Eliminates Repetitive Loss (1- 10pts)	Greatest Economic Impact (0-10)	Greatest Good for Most People (0-10)	Least Expensive Option (0-10)	Funding Is Secure or Easy to Obtain (0-5)	Can Fund Sooner (0-5)	Has Greater Public and Political Support (0-5)	Benefits More Than One Jurisdiction (0-5)	Addresses Two or More Goals (0-5)	Local Ability to Perform Project (0- 5)	TOTAL POINTS From both forms
PE-1: INFORMATION.											

- Scoring tallied and averaged across the participants resulting in a ranking for each measure

Strategies

Table 5-1: Prioritized Mitigation Strategies

MITIGATION MEASURES (multi-hazard and hazard)			Action Items	RESPONSIBLE TO IMPLEMENT	COORDINATION WITH OTHER ORGANIZATIONS		TIMELINE	PRIORITY RANK	PLAN GOALS THAT APPLY			
					INSIDE CTUIR	OUTSIDE CTUIR					1	2
PUBLIC EDUCATION and AWARENESS												
New to plan												
PE-1		INFORMATION. Prepare and distribute hazard and safety preparedness information	Use website, brochures, events and public announcements to disseminate information	CTUIR Public Safety	CTUIR Police, Fire, public works, Tiichum SWCD	Umatilla County, cities, State of Oregon, FEMA, NRCS	Short and Long Term	1	✓		✓	
PE-2		BUSINESS CONTINUITY PLAN. Prepare a business continuity plan that helps maintain the Tribe's economy during and after a disaster	Assign task to a department or hire a consultant	CTUIR-Economic & Community Dev.	WRC, Mission Market, Arrowhead	-----	Long	8	✓	✓		

- Measures categorized in table with priority ranking
- Lessons learned

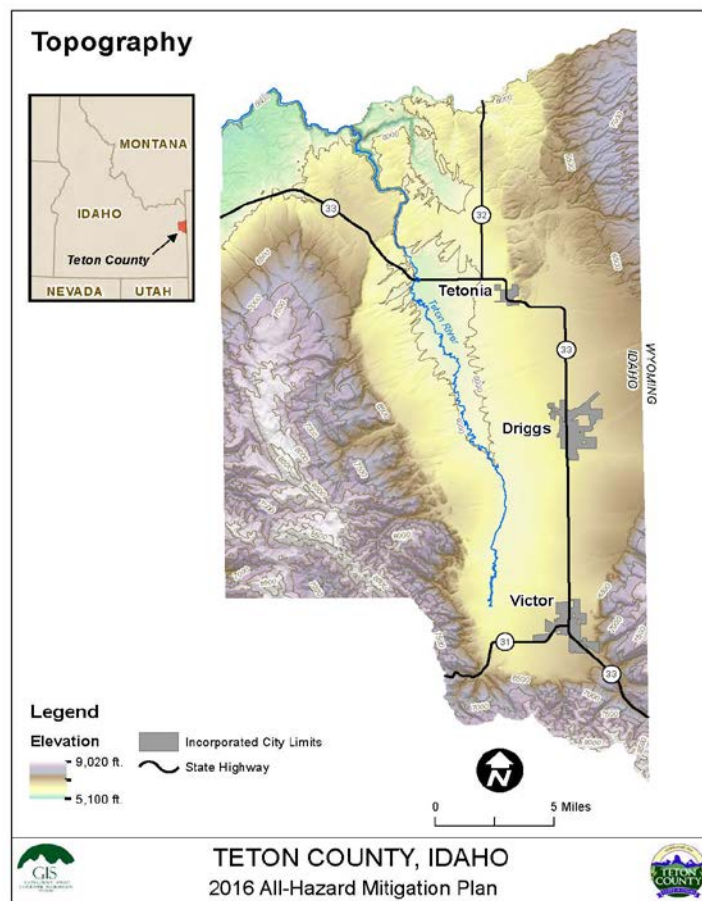
- Teton County is comprised of a valley between the Teton and Big Hole mountains
- 10,000 residents

Two Planning Groups:

Main Group
CWPP Group

4 Large Meetings:

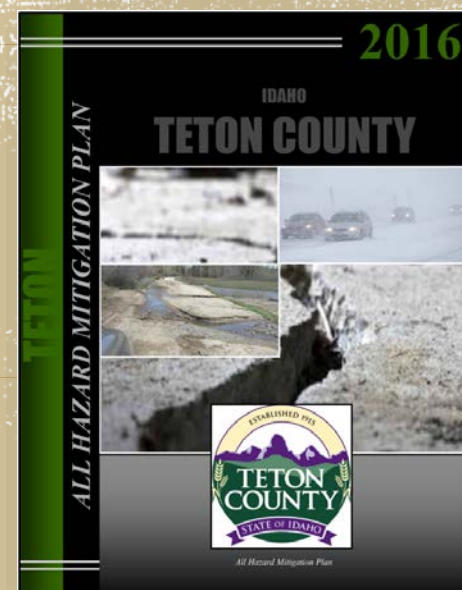
- 1-Review hazards & identify new hazards
- 2-Review risk rankings & identify projects
- 3-Finalize & prioritize projects
- 4-Review Final Draft



Teton County, Idaho

Greg Adams

Emergency Management
Coordinator



AHMP

- Previous AHMP's hazard ranking

THIRA

- THIRA

Community

- Communities risk perception outreach results

Current Risk Rankings

**How we
ranked our
risk**

- Main planning team of County, City officials, agency heads, first response agencies, utility companies, interested entities and citizens.
- Prioritized the projects per hazard as well as chose their top 10 projects overall.

Hazards	Risk Rating	Impacts	Projects	Priority for this hazard	Rank your Overall top 10
General			Increase local adoption and use of our mass notification system		
			Create a public information plan to educate our citizens on all of our hazards		
			Review public codes and policies for ways to reduce risk to the public		
			Procure first responder communication resources		
			Procure resources and supplies for responding to and managing disasters		
			Educate and train first responders, agency heads, and elected officials		
			Recruit and train EOC staff		
Avalanche	Moderately Low	We have had 3 deaths from avalanches in Teton County and many more in neighboring areas that border our County.	Local radio or social media daily avalanche danger info during avalanche season		
			Warning signs at trailheads		
			Outreach to groups that use the snow, i.e. snowmobile clubs, skiing organizations.		
Drought	Moderately Low	Crop insurance claims from 2008 to 2014 for Drought total \$334,629.75 Teton declared a drought disaster in 2003, 2004, 2007, 2010, 2012, and 2013.	Water conservation education. Target neighborhoods that have access to irrigation water. Education on native grasses & drought resistant landscaping to the public to public agencies and nursery businesses.		
			Cloud seeding		
			Canal to pipes projects		
Extreme Cold	Moderately High	Crop insurance claims for 2008 to 2014 for cold winter, freeze and frost total \$4,382,451.64	Bury water/sewer lines deeper under the streets to prevent frozen main lines		
			Install SCADA monitoring on City Water and Sewer sytems		
			Education on avoiding frozen pipes for citizens		

How did we prioritize our projects?



- Annual public meeting in conjunction with our LEPC to review project progress, create goals for the coming year and identify any new hazards.

Teton County All Hazard Mitigation Plan Projects						
Jurisdiction	Hazard	Prior ity	Project	Target Completion Date	2016 Actual Actions	2017 Goals
All	All	H	Create a public education campaign to educate our citizens on all of our hazards	2018		Define project for the following year
All	All	H	Educate & train first responders, agency heads and elected officials	Ongoing		At least one community exercise
All	All	H	700 MHz radios for public works to communicate with first responders more easily	Ongoing		
All	All	H	Create Emergency Action Plans for specific public buildings	2018	Annual Inspection for Schools completed	
All	All	H	Increase local adoption and use of our mass notification system	Ongoing		
All	All	H	Procure first responder communication resources	Ongoing	Grant Radios Acquired	
All	Avalanche	H	Provide local radio or social media regarding daily avalanche danger during avalanche season	2018		
All	Drought	H	Water conservation education	2019		
All	Earthquake	H	Research & procure quick disconnect lines for propane tanks for critical infrastructure & schools	2022		
All	Earthquake	H	Seismic retrofit project for critical facilities including Driggs, Teton and Victor City Halls, Victor's water storage facilities, and schools	2027		
All	Lightning	H	Ensure public facilities are sufficiently grounded and have surge arrestors	2020		
All	Public Health	H	Stockpile pandemic supplies	Ongoing	maintaining supplies/staff advised	
All	Severe Winter Storm	H	Equipment for public works, such as snow removal equipment	Ongoing	Continue upkeep and replace	
All	Structural Fire	H	Fire protection water supplies inspections/inventorying	Ongoing	Annual Inspections Performed	
All	Structural Fire	H	Encourage business and homeowners to install smoke detectors	Ongoing	Fire Inspections Performed/Red Cross provides free detectors	
All	Utility disruption	H	Generators & switches/adaptors for critical infrastructure locations & schools	2020	County submitted grant application 12/5/2016	Apply for a PDM grant for this project
			Procure resources and supplies for responding to and managing disasters. i.e.			

What's next?

An easy plan revision after 4 years of working together to reduce our susceptibility to hazards.

Plan Updates

The plan **must** describe the status of hazard mitigation actions in the previous plan by identifying those that have been completed or not completed. For actions that have not been completed, the plan **must** either describe whether the action is no longer relevant or be included as part of the updated action plan.



The following 2010 action items have been deleted/completed from the 2015 plan.

Action Item	Action Title	Reason for Deletion/Completion
MH – Action 1.1	Create and formalize city of Albany Steering Committee to oversee Plan implementation	This action was completed. The establishment of the Department Heads as the Steering committee for the City of Albany Natural Hazard Mitigation Plan
MH – Action 1.2	Develop agreements with external partners to work together on risk reductions efforts in the city	This action was completed. No formal agreements have been developed, but over the last five years both Pacific Corp and NW Natural have implemented preparedness campaigns to educate the public on being prepared for natural disasters
MH – Action 1.3	Look for funding opportunities to implement the actions identified in the plan and enter into a formal agreement to work together as needed	This action was deleted. Grant funding has been significantly reduced over the last five years. The City of Albany did receive a grant to seismically upgrade Fire Station 12. One city school has been seismically upgraded and Linn Benton Community College recently received a grant to seismically upgrade one of its buildings. It was also decided this was something done automatically when we look at an action item. No need to have a specific action to look for funding.
MH – Action 1.5	Work with Natural Hazard Partners to develop and maintain a data base of current action items	This action was deleted. It was decided by the Steering Committee this action was not necessary. It would take more time and effort to establish and update than it would be worth to the public
MH – Action 2.1	Develop and implement communications strategies for the dissemination of media	This action was completed. It was determined by the Steering Committee

City of Albany, Oregon



City of Albany, Oregon
Natural Hazard Mitigation Plan

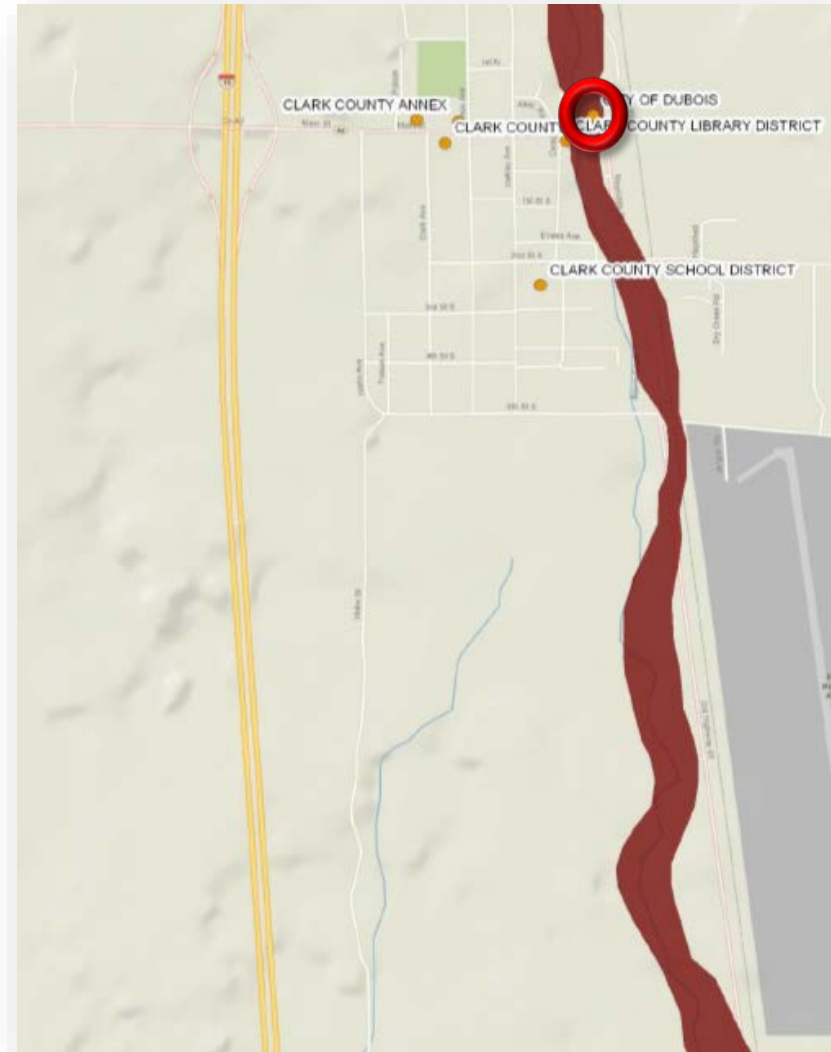
Final Report for:
Albany City Council

Prepared by:
Emergency Management
Albany Fire Department
John Brasher
P.O. Box 400
Albany, Oregon 97321
Phone: (541) 917-7701

January 2016

Example: Flooded School

Smith High School is in a low lying areas that is flooded every 5 years by the Elk River. This disruption has closed school for a total of 60 days the past 20 years and caused \$3.5 million in damage to school property. In addition, the school is considered a possible shelter location in the event of a disaster.

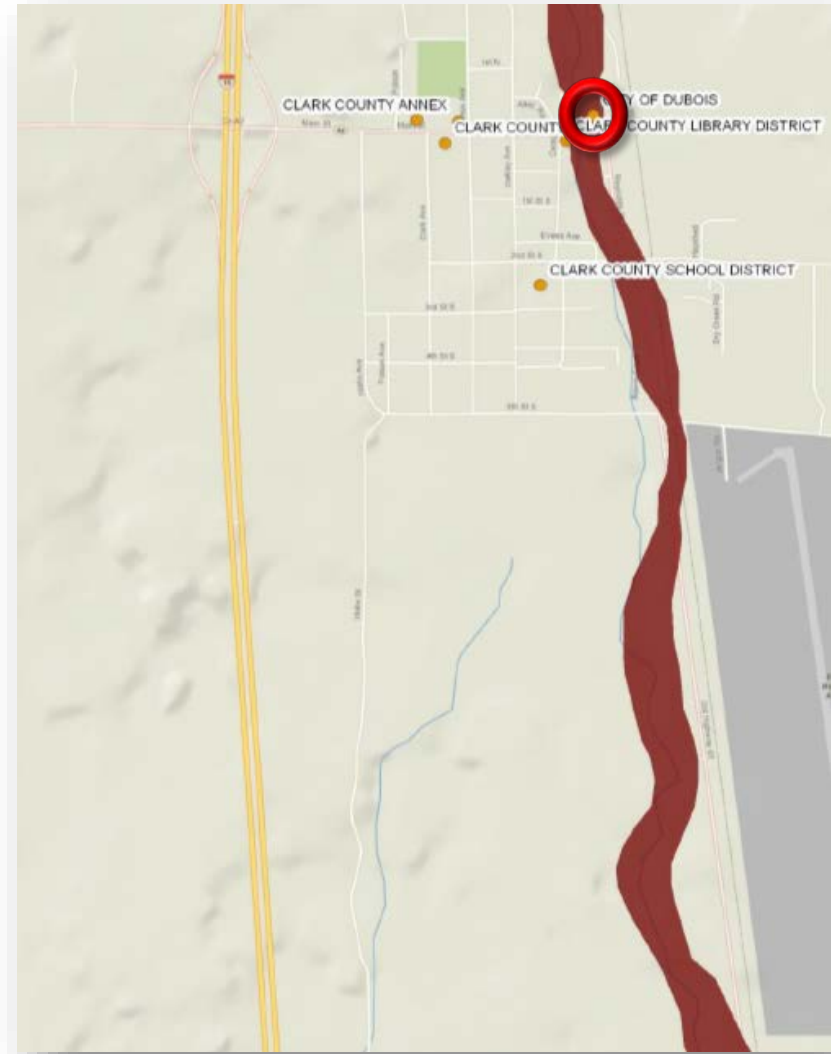


Example: Flooded School

Smith High School is in a low lying areas that is flooded every 5 years by the Elk River. This disruption has closed school for a total of 60 days the past 20 years and caused \$3.5 million in damage to school property. In addition, the school is considered a possible shelter location in the event of a disaster.

Comprehensive Range of Actions

1. Elevate the school in its current location
2. Retrofit school with flood proof materials
3. Relocate school to new, less flood prone location



Example: Flooded School

Smith High School is in a low lying areas that is flooded every 5 years by the Elk River. This disruption has closed school for a total of 60 days the past 20 years and caused \$3.5 million in damage to school property. In addition, the school is considered a possible shelter location in the event of a disaster.

Mitigation Action	Technical	Political	Legal	Environmental	Social	Administrative	Local Champion	Other Community Objectives	Total Score
Elevate the school in its current location	+1	0	+1	+1	0	+1	0	0	4
Relocate school to new, less flood prone location	+1	+1	+1	+1	+1	+1	0	+1	7
Retrofit school with flood proof materials	+1	0	0	+1	-1	+1	+1	+1	4

Example: Flooded School

Jurisdiction:	Clark School District
Mitigation Action/Project Title:	Relocate Smith High School to a less flood prone location in the community
Background/Issue:	Smith High School is in a low lying areas that is flooded every 5 years by the Elk River. This disruption has closed school for a total of 60 days the past 20 years and caused \$3.5 million in damage to school property. In addition, the school is considered a possible shelter location in the event of a disaster.
Responsible Agency:	School District Facility Department
Partners:	County Community Development; County Emergency Management
Potential Funding:	School bond
Cost Estimate:	\$20 million
Timeline:	2023
Priority:	High
Worksheet Completed by:	Mary Stone (School District Superintendent's Office)

Resources

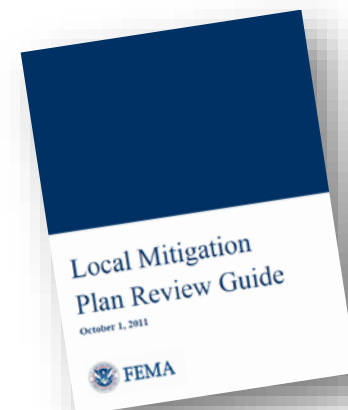
DOCUMENTS

- **Local Mitigation Planning Handbook**
<http://www.fema.gov/library/viewRecord.do?id=7209>
- **Mitigation Ideas** <http://www.fema.gov/library/viewRecord.do?id=6938>
- **Local Mitigation Planning Guidance** <https://www.fema.gov/media-library/assets/documents/23194>
- **Tribal Multi-Hazard Mitigation Planning Guidance**
<http://www.fema.gov/media-library/assets/documents/18355>



TRAINING

- **IS-318 - Mitigation Planning for Local and Tribal Communities**
Online training: <http://training.fema.gov/EMIWeb/IS/is318.asp>



WEBSITE

- **FEMA Mitigation Planning**
<https://www.fema.gov/hazard-mitigation-planning>



Review Learning Objectives

At the end of this webinar, participants will be able to:

1. Understand connection between risk assessment, capability assessment, and developing actions
2. Identify mitigation strategies to address community vulnerabilities
3. Evaluate and prioritize actions based on specified criteria
4. Develop an implementable action plan

Incorporating Climate Adaptation into Natural Hazards Mitigation Planning



NEXT MONTH

August 25, 2017

10am-11am PST

Registration information on the STARR site

Will email all of you registration information

Hazard Mitigation Planning

Climate Adaptation Planning

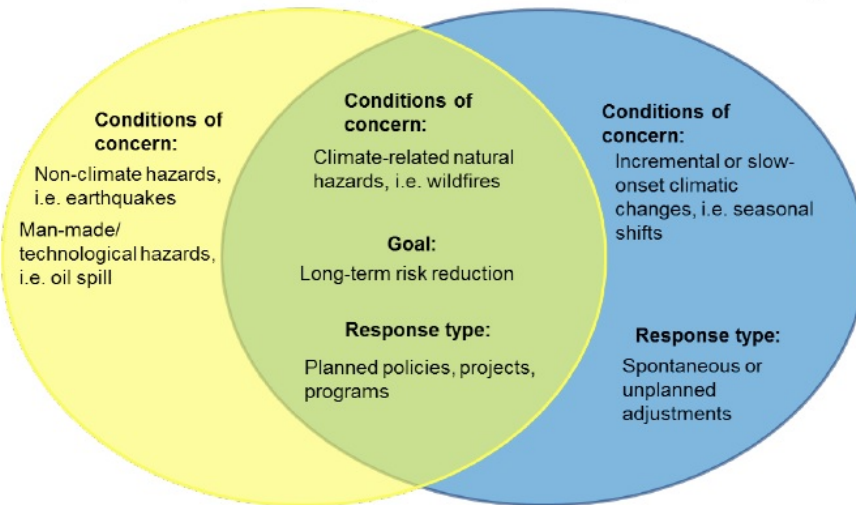


Figure 5: The intersection of Hazard Mitigation and Climate Adaptation Planning

This webinar will explore the potential of the plan and the planning process for addressing climate science and adaptation options. Topics covered will include:

- Where to find data on climate change impacts,
- How to prioritize specific impacts for your community, and
- Examples of integrating data into the hazard risk assessments and mitigation actions.

- **January:** *Introduction to Mitigation Planning*
- **February:** *Building the Mitigation Planning Team*
- **March:** *Effective Public Engagement in Mitigation Planning*
- **April:** *Developing FEMA Mitigation Planning Grants*
- **May:** *Performing Natural Hazard Risk Assessments*
- **June:** *Integrating Natural Hazard Mitigation Plans and Community Wildfire Protection Plans*
- **July:** *Developing Natural Hazard Mitigation Strategies*
- **August:** *Climate Adaptation and Mitigation Planning*
- **September:** *Tribal Mitigation Planning*
- **October:** *Addressing Social Equity through Mitigation Planning*
- **November:** *Integrating Natural Hazard Mitigation Plans into Local Comprehensive Plans*
- **December:** *Mitigation and Recovery Planning (Change)*



2017 FEMA REGION 10 COFFEE BREAK CALENDAR

Anchorage, Alaska

- Hosted by Alaska Division of Homeland Security & Emergency Management
- September 27-28
- Registration open now

Lynnwood, Washington

- Hosted by FEMA Region 10 Office
- October 24-25
- Registration announced Summer 2017

Region 10 In-Person Training

2017 Schedule

G-318: Mitigation Planning
Workshop



FEMA REGION 10 MITIGATION PLANNING TEAM

- Brett Holt, Mitigation Planning Program Manager,
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- Amanda Siok, Mitigation Planner,
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ALASKA

- George Grady, State Mitigation Planner,
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IDAHO

- Lorrie Pahl, State Mitigation Planner,
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OREGON

- Joseph Murray, State Planner,
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WASHINGTON

- Derrick Hiebert, State Mitigation Strategist,
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