



Hiouchi Local Hazard Mitigation Plan



PUBLIC OUTREACH

Mitigation Strategy Public Input Meeting

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Today's Discussion

- The Planning Team
- The Disaster Mitigation Act
- Planning Process
- Hazard Risk Assessment
- Mitigation Strategy Review and Input
- Individual Disaster Preparedness
- Next Steps

The Planning Team

- Big Rock CSD awarded Hazard Mitigation Funds under Disaster Grant to fund this effort
 - 75% of this cost is federal, 25% is local
 - Local contribution will be “in-kind”
- GHD Inc. has been awarded the contract to facilitate this plan update process.
- The Planning Team Includes:
 - ✓ ***Craig Bradford*** District Project Manager
 - ✓ ***Rebecca Crow***, GHD (Lead Project Planner)
 - ✓ ***Dagan Short***, GHD (Risk Assessment/HAZUS lead)



So why are you here?

- You live in Hiouchi
- You are an interested member of the public
- You all have been identified as a potential stakeholder in hazard mitigation
 - So what does it mean to be a stakeholder?
 - You can benefit by being a planning partner
 - Your facilities can benefit
 - Your constituents can benefit
 - Your agency has authority over development in Hiouchi

What is the Disaster Mitigation Act (DMA)?

Federal legislation that establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP).

The DMA:

- Encourages and rewards local and state pre-disaster planning
- Promotes sustainability
- Strengthens statewide hazard mitigation through encouraging the integration of State and local planning
- Provides for faster more efficient allocation of funding and more effective risk reduction projects

Why is a LHMP Required?

- Section 201.6 44CFR states that approved local HMP's must be updated at least every 5 years to remain eligible for Hazard Mitigation Grant Funding
- Effective plans are those that remain relevant, which requires them to be reviewed and enhanced regularly.
- Maintaining an established HMP creates opportunities to integrate with other planning processes, and plans of adjacent jurisdictions.
- Hiouchi must complete a Local Hazard Mitigation Plan by August 23, 2017 to retain funds for the Hillside Stabilization Project

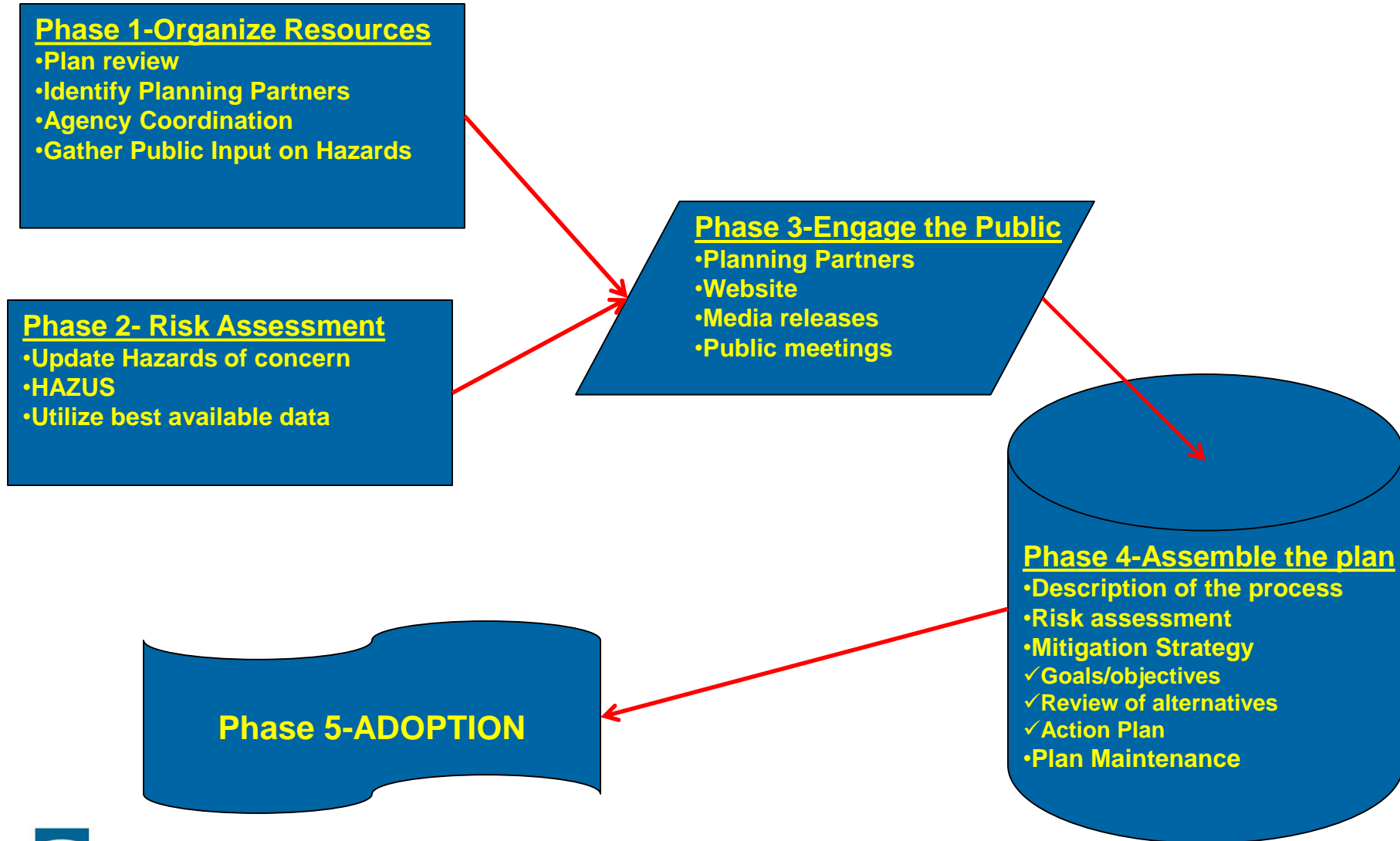
The Planning Process

District personnel applied for and received a FEMA planning grant (75% Federal)

- ✓ *Established a Planning Team*
- ✓ *Reached out to stakeholders and potential planning partners*
- ✓ *Assessed Risk to 6 Hazards of Concern*
- ✓ *Engaged the Public*
- ✓ *Identified goals, objectives and actions*
- ✓ *Identified a plan maintenance strategy*



Phases of Plan Development



LHMP Risk Assessment

What would happen if a natural disaster occurred in Hiouchi?

- Hazard identification—The systematic use of all available information to determine what types of disasters may affect a jurisdiction, how often these events can occur, and the potential severity of their consequences.
- Vulnerability identification—The process of determining the impact of these events on the people, property, environment, economy and lands of a region

The Planning Area

The planning area for the effort encompasses the Service Boundary of the Big Rock Community Services District



LHMP Hazards

Primary Hazards

- Earthquake
- Flooding
- Wildland Fire



Secondary Hazards

- Severe Weather
- Landslides
- Hazardous Materials



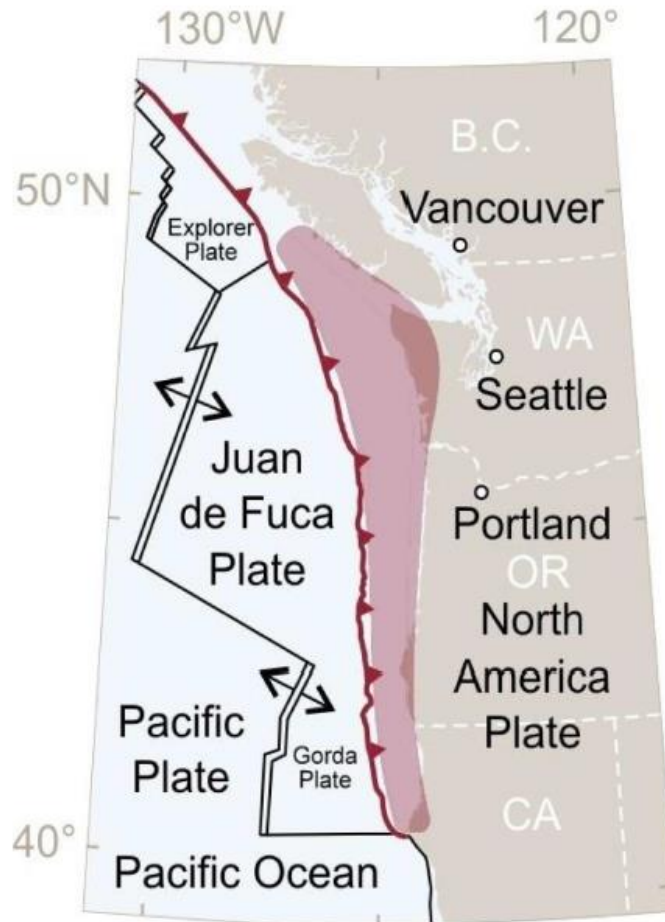
District Owned Critical Facilities

- 100,000 Gallon Redwood Water Storage Tank
- 50,000 Gallon Redwood Water Storage Tank
- Water Treatment Facility
- 4.2 Miles of Water Main (8, 6, and 4-inch pipelines)
- Transmission and distribution pipelines (6.9 miles of 2-inch lines)
- Water intake System
 - 2 Submersible 10 hp Single-phase Pumps
 - 3 Deeply Submersed Collection Galleries
 - Heavy Overhead Lift
- Main and Hillside Pump Houses

Hiouchi Critical Facilities

- Hiouchi Hamlet/ Chevron Station
- Highway 199
- Smith River Fire Protection District Fire Station No. 2

Earthquake Faults



The stuck, or 'locked' part of the interface between the North American and subducting plates - the fault that breaks in great earthquakes.

The seaward edge of the subduction zone, where the subducting plates begin their descent beneath the North American Plate.

Spreading ridges where plates separate and injected magma forms new oceanic crust.

Vertical faults oriented so plates move parallel to one another.



Credit: Cascadia Subduction Zone Earthquakes: A Magnitude 9.0 Scenario, 2013, CREW, FEMA, NEHRP

Earthquake Faults

THE CASCADIA SUBDUCTION ZONE IN CROSS-SECTION:

New crust forms at spreading ridges between the Pacific Plate and the Juan de Fuca, Gorda, and Explorer plates. As these three plates are pushed eastward, they are forced to subduct beneath the North American Plate. Strain builds up where they have become stuck (locked) and will be released one day in a great earthquake.

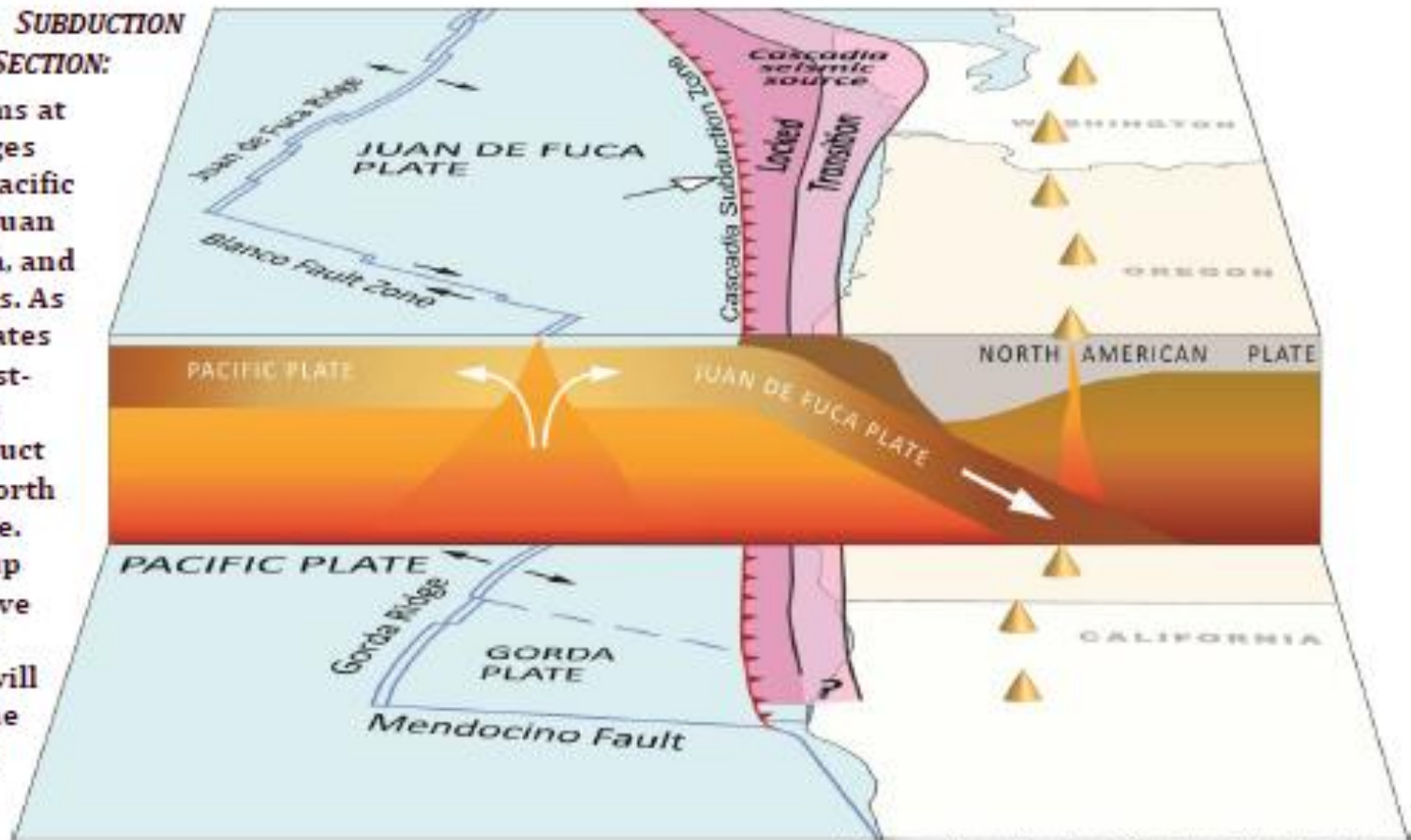
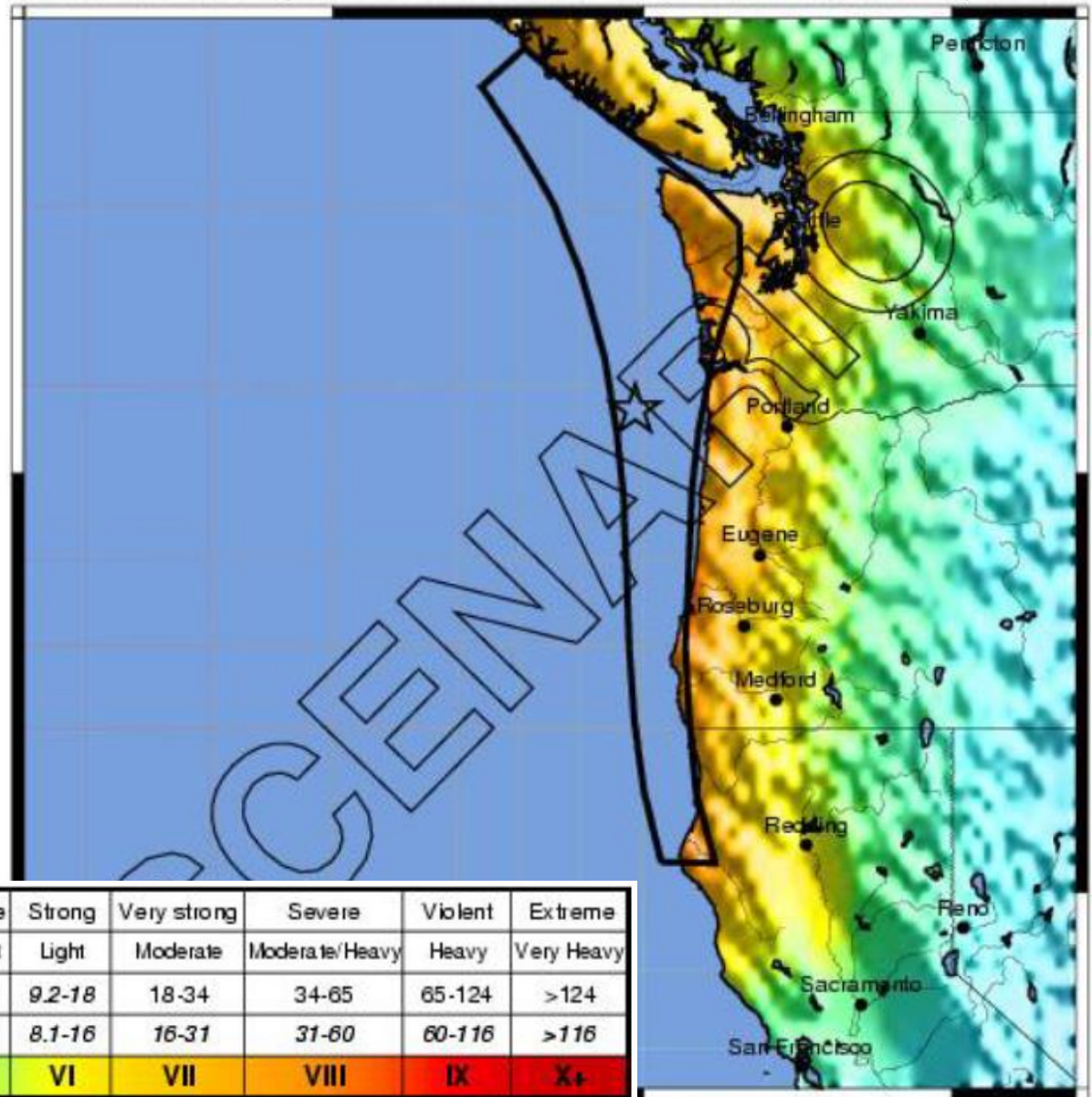


Image Source: Oregon Department of Geology and Mineral Industries

Earthquake Planning Scenario for 9.0 Magnitude Cascadia Event

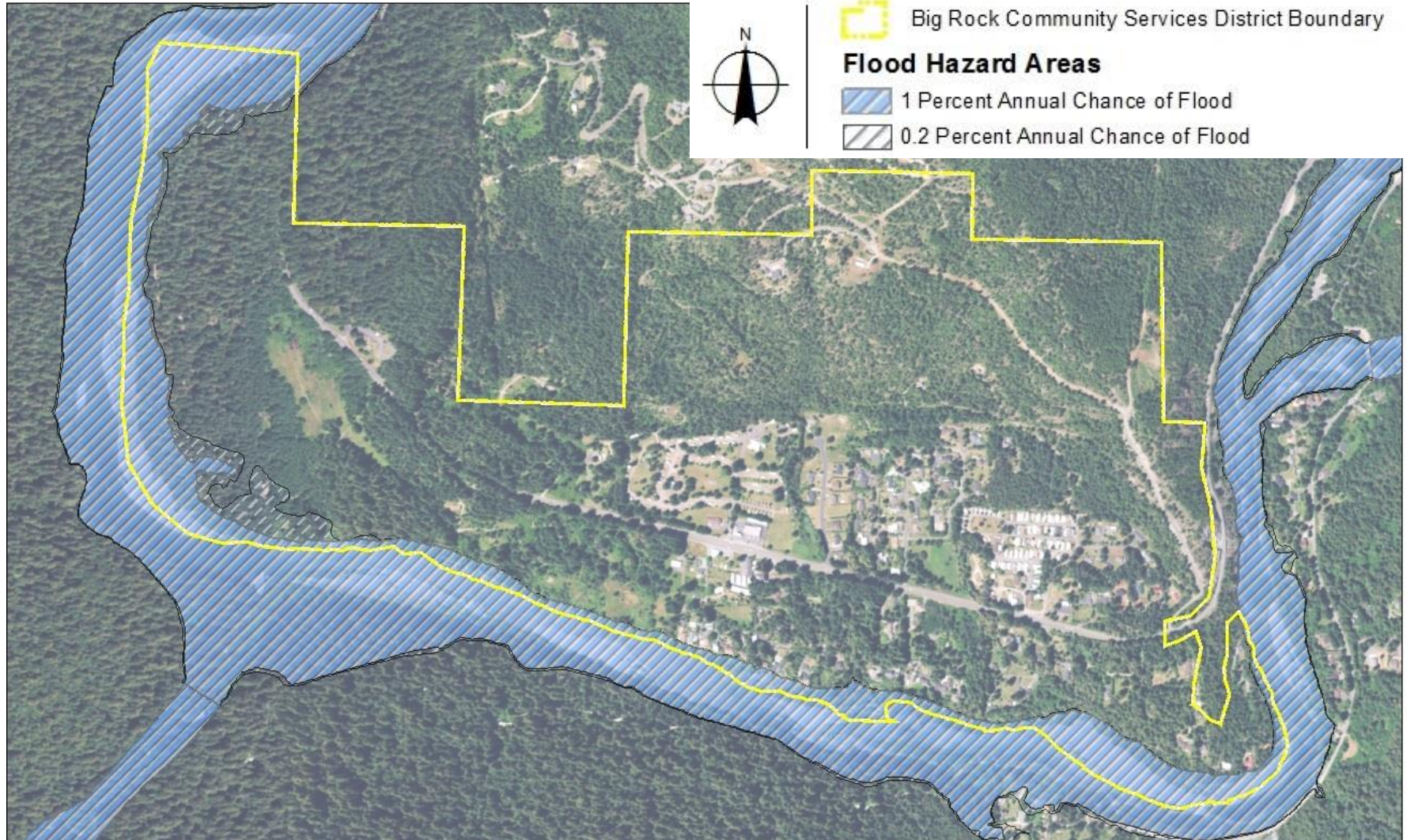


PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC. (%g)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
PEAK VEL. (cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+



Credit: Cascadia Subduction Zone Earthquakes: A Magnitude 9.0 Scenario, 2013, CREW, FEMA, NEHRP

Flood Hazard



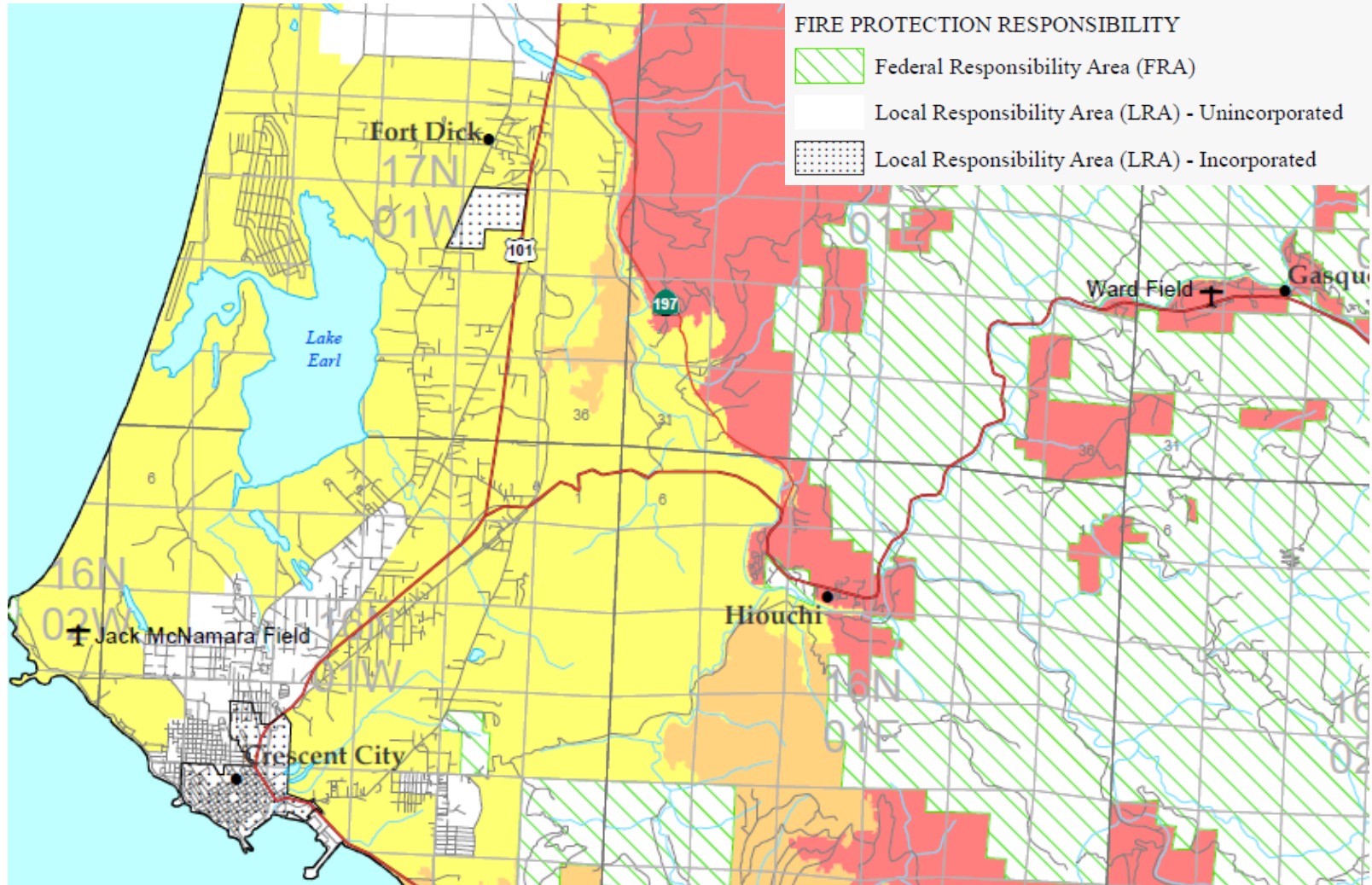
Fire Hazard

FIRE HAZARD SEVERITY ZONES in State Responsibility Area (SRA)

- Moderate
- High
- Very High

FIRE PROTECTION RESPONSIBILITY

- Federal Responsibility Area (FRA)
- Local Responsibility Area (LRA) - Unincorporated
- Local Responsibility Area (LRA) - Incorporated



Severe Weather Hazard

- Extreme temperature (hot or cold)
- Precipitation
- High wind



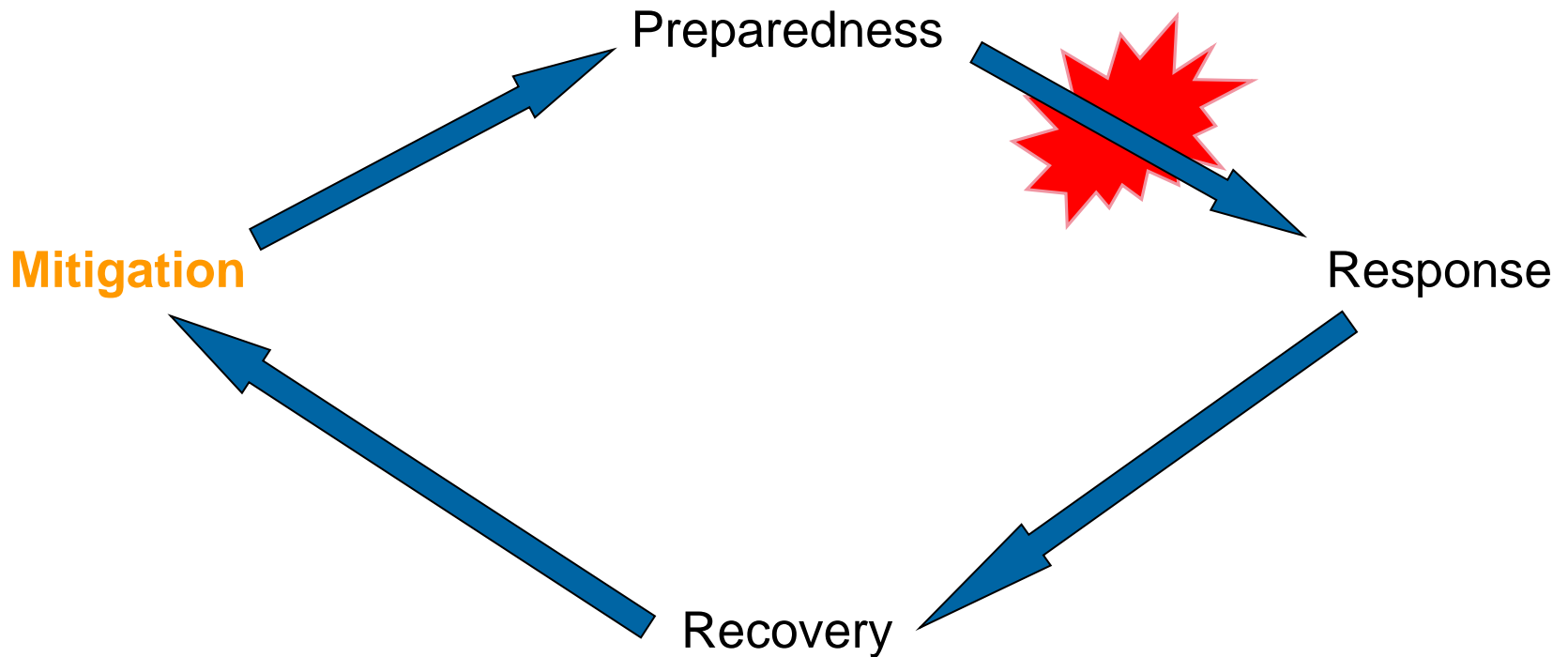
Hazardous Materials Hazard

A **hazardous material** is any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors and can include:

- Petroleum (gasoline, oil, etc)
- Cleaning solvents
- Pesticides, herbicides, and rodenticides
- Fertilizers
- Aerosols



What is Mitigation?



“Sustained action taken to reduce or eliminate long-term risk to life and property” (Prevention)

Hazard Mitigation Action Plan Draft Goals

- Goal 1: Minimize risk and vulnerability of Hiouchi and surrounding areas to the impacts of natural hazards and protect lives and reduce damages and losses to property, economy, public health and safety, and the environment.
- Goal 2: Provide protection for critical facilities, infrastructure, utilities and services from hazard impacts.
- Goal 3: Improve public awareness, education, and preparedness for all hazards.
- Goal 4: Increase communities' capabilities to mitigate losses and to be prepared for respond to, and recover from a disaster event.
- Goal 5: Maintain FEMA Eligibility/Position the communities for grant funding.



Currently Proposed Hazard Mitigation Actions

Mitigation Actions	Hazards Addressed
Replace the 100,000-gallon Redwood water storage tank with a bolted steel tank mounted on a granite shelf, and increase the working capacity to 200,000 gallons to accommodate water service to the community. Acquire ownership of 6.83 acres to secure facilities	All Hazards
Install a complete emergency communications system with 70-ft antenna tower and a 30 kW generator with propane field for emergency HF/VHF/UHF, and Simplex communications. The tower will include a microwave antenna to perform SCADA operations	All Hazards
Replace the 50,000-gallon Redwood water tank with a bolted steel tank mounted on ultramafic granite and increase total capacity to 100,000 gallons. Secure against threats of vandalism/terrorism	All Hazards
Improve road access to the District's assets and emplace flood and erosion barriers	All Hazards

Currently Proposed Hazard Mitigation Actions

Mitigation Actions	Hazards Addressed
Upgrade the existing SCADA system	All Hazards
Purchase a ¾-ton 4WD replacement vehicle for staff that is equipped with VHF/UHF radio	All Hazards
Purchase two satellite telephones with a 5-year service contract	Earthquake, Severe Weather
Replace all aged water mains, including resilient features, to reduce damage during hazard events	All Hazards
Support countywide initiatives identified in Del Norte County's MJHMP	All Hazards

Currently Proposed Hazard Mitigation Actions

Mitigation Actions	Hazards Addressed
Develop a Big Rock CSD Catastrophic Disaster Plan addressing prevention, protection, response, recovery, and mitigation	All Hazards
Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	All Hazards
Support Smith River Fire Protection District, Fire Station No. 2 with structural seismic upgrades and installation of emergency preparedness equipment	All Hazards

Personal Emergency Preparedness – Survey Results

Have Stored or Stocked up On	Responses
Food	3
Water	2
Flashlight(s)	3
Batteries	3
Battery-powered radio	2
Medical supplies (First aid kit)	3
Fire extinguisher	3

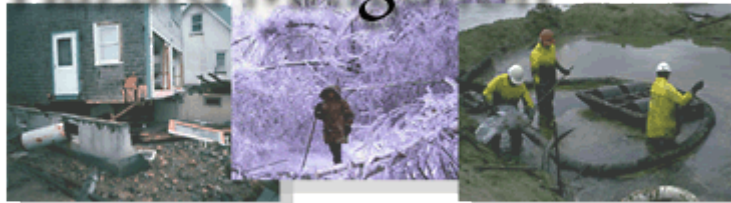
Other Preparations	Responses
Prepared a disaster supply kit	2
Received First Aid/CPR training	4
Made a fire escape plan	2
Discussed utility shutoffs	2
Smoke detector on each level of house	4
Developed a reconnection plan	1

Personal Emergency Preparedness Resources

How can I prepare myself and my family in case of an emergency?

1. Develop an Emergency Communication Plan
2. Create an Emergency Supply Kit
3. Become familiar with the Hazards in your community
4. Know your neighbors
5. Prepare!

Hazard Mitigation



Managing Risks, Lowering Costs



Emergency Communication Plan

Create an emergency communications plan and build an emergency kit to ensure you and your family are prepared for hazards.

Your family may not be together if a disaster strikes, so it is important to think about the following situations and plan just in case. Consider the following questions when making a plan:

- How will my family/household get emergency alerts and warnings?
- How will my family/household get to safe locations for relevant emergencies?
- How will my family/household get in touch if cell phone, internet, or landline doesn't work?
- How will I let loved ones know I am safe?
- How will family/household get to a meeting place after the emergency?



Emergency Supply Kit

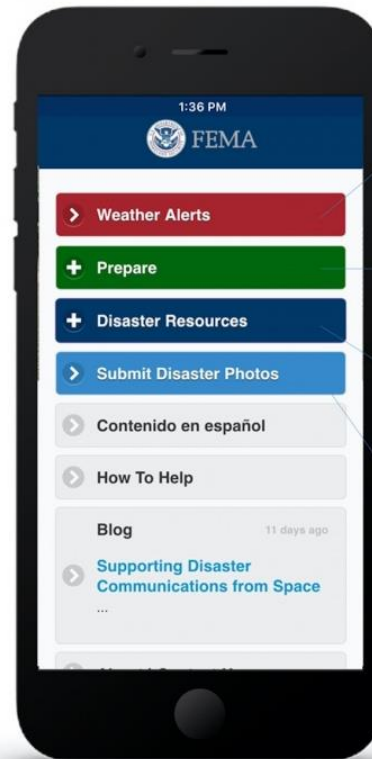
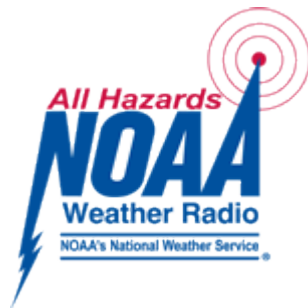
Recommended Items to Include in a Basic Emergency Supply Kit:

- Water, one gallon of water per person per day for at least three days, for drinking and sanitation
- Food, at least a three-day supply of non-perishable food
- Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both
- Flashlight and extra batteries
- First aid kit
- Whistle to signal for help
- Dust mask, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Can opener for food (if kit contains canned food) Local maps



Become Familiar with the Hazards in Your Community

- Research and understand mitigation measures you can implement at home to address earthquakes, floods and wildfire.
- Link to emergency notification system to be aware of potential hazards



Receive alerts from the National Weather Service for up to five locations.



Get safety reminders, read tips to survive natural disasters, and customize your emergency checklist.



Locate open shelters and where to talk to FEMA in person (or on the phone).



Upload and share your disaster photos to help first responders.

Preparing for Flood Hazards

There are small flood proofing measures that you can take to help prevent, or minimize the impact of flooding to your home and its contents. A few examples include:

- Elevate your furnace, water heater and electric panel in your home, if you live in a high flood risk area.
- Install "check valves" to prevent flood water from backing up into the drains of your home.
- When practical, homeowners can construct barriers (such as sandbagging) to stop floodwater from entering your home.
- Seal walls in your basement with waterproofing compounds.



Preparing for Wildfire Hazards

There are several simple steps that can be taken to prepare for wildfire hazards which include:

- Regularly clean the roof and gutters.
- Maintain an area approximately 30' away from you home that is free of anything that will burn, such as wood piles, dried leaves, newspapers and other brush.
- Connect garden hoses long enough to reach any area of the home and fill garbage cans, tubs, or other large containers with water.
- Review your homeowner's insurance policy and also prepare/update a list of your home's contents.
- Know evacuation routes
- Stay in communication



Preparing for Earthquakes

At a minimum, you should be prepared to be isolated and on your own for at least seven days and nights. There will likely be the loss of utilities after a disaster. It is possible the power will be out, water may be scarce, gas lines may break, phones and cell towers could become inoperable, roads might be impassible, etc. Your only source of news may well be the car radio, assuming your local radio station has a working generator. There might not be medical assistance for days. To begin preparing your home and family:

- Identify potential hazards in your home and begin to fix them.
- Create a disaster-preparedness plan.
- Identify your building's potential weaknesses and begin to fix them.
- Protect yourself during earthquake shaking.
- After the quake, check for injuries and damage.
- When safe, continue to follow your disaster-preparedness plan.

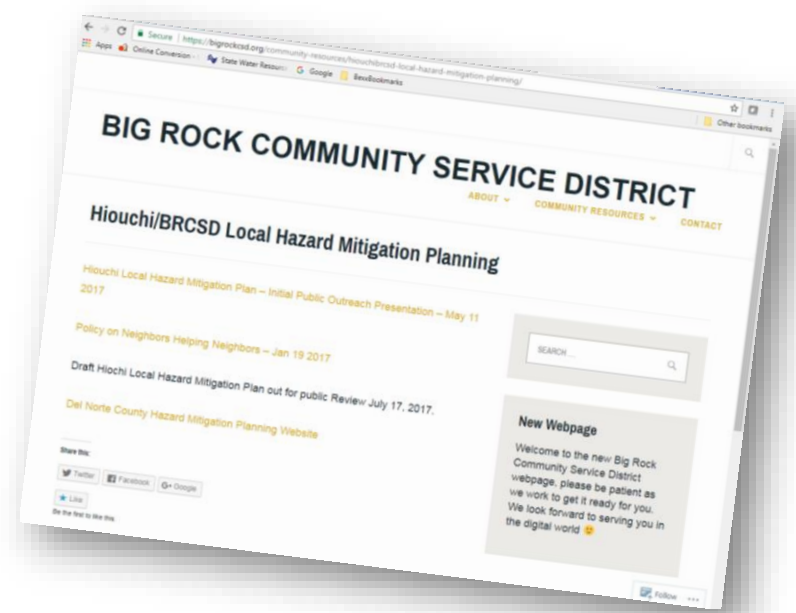


For More Information

Please visit the BRCSD Website at:
<http://www.bigrockcsd.org>

Community Resources Page Includes:

- Initial Outreach Meeting Presentation
- BRCSD Neighbors Helping Neighbors Policy
- Emergency Preparedness Resources
- Draft Local Hazard Mitigation Plan



So What's Next?

- Draft Plan available July 17 – August 16th for review
 - Comments due to BRCSD by August 16th
- BRCSD considers public comments and adopts LHMP – August 17th
- Submit Final LHMP to FEMA by August 23, 2017

QUESTIONS





www.ghd.com