

**SECTION 1: PRE-REQUISITES & ADOPTION
BY THE LOCAL JURISDICTIONS**

INTRODUCTION & PLAN PURPOSE

The three northernmost Utah counties that make up the Bear River Region are vulnerable to natural, technological, and human caused hazards that have the possibility of causing serious threat to the health, welfare, and security of our citizens. The cost of response and recovery from potential disasters, both in terms of potential loss of life or property, can be lessened when attention is turned to mitigating their impacts before they occur or re-occur.

This plan attempts to identify the region's hazards, understand our vulnerabilities and craft solutions that can significantly reduce threat to life and property. The plan is based on the premise that hazard mitigation works! With increased attention to managing natural hazards, communities can do much to reduce threats to existing citizens and avoid creating new problems in the future. In addition, many solutions can be implemented at minimal cost.

This is not an emergency response or management plan. Certainly, the plan can be used to identify weaknesses and refocus emergency response planning, which is an important mitigation strategy. However, the focus of this plan is to support better decision making directed toward avoiding future risks, and the implementation of activities or projects that will eliminate or reduce the risk for those that may already have exposure to a natural hazard threat.

How The Plan Is Organized

Section 1 introduces the plan, outlines the plan including scope, purpose, and goals, lists participating communities, and includes commentary on changes in the plan from earlier versions. Section 2 documents the planning process, public involvement, and summarizes information on natural hazards in the Bear River Region. Section 3 gives a general regional background including basic demographic, economic, and physiographic characteristics.

Section 4 is the Bear River Regional Risk Assessment. Because of the uniformity of the hazard risk throughout the region and the similarity of vulnerabilities, severe weather,

drought, agricultural hazards, radon, and problem soils were analyzed at the regional level. This section also includes commentary regarding implications of the potential effects of natural hazards on future development. Section 5, 6, and 7 includes natural hazard risk assessments for cities, towns, and the unincorporated county areas for Box Elder, Cache, and Rich Counties, respectively. Section 8 documents local community planning and technical capability to implement mitigation strategies, and Section 9 discusses plan implementation, funding, and public involvement.

How The Plan Should Be Used

First, the plan should be used to help local elected and appointed officials plan, design, and implement programs and projects that will help reduce their community's vulnerability to natural hazards. Second, the plan should be used to facilitate inter-jurisdictional coordination and collaboration related to natural hazard mitigation planning and implementation. Third, the plan should be used to develop or provide guidance for local emergency planning. Finally, if adopted, the plan will bring communities in compliance with the Disaster Mitigation Act of 2000, qualifying jurisdictions to apply for funding for pre-disaster mitigation projects and for receiving federal aid in the event of a presidentially declared disaster.

What Is Hazard Mitigation?

Hazard mitigation is defined as any cost-effective action(s) that has the effect of reducing, limiting, or preventing vulnerability of people, property, and the environment, to potentially damaging, harmful, or costly hazards. Hazard mitigation measures, which can be used to eliminate or minimize the risk to life and property, fall into three categories. First, are those that keep the hazard away from people, property, and structures. Second, are those that keep people, property, and structures away from the hazard. Third, are those that do not address the hazard at all but rather reduce the impact of the hazard on the victims, such as insurance. This mitigation plan has strategies that fall into all three categories.

Hazard mitigation measures must be practical, cost effective, and environmentally and politically

acceptable. Actions taken to limit the vulnerability of society to hazards must not in themselves be more costly than the value of anticipated damages. However, some projects may require financial commitments from local jurisdictions without any measurable monetary reward or benefit, although it may save lives and priceless community assets. Some initial financial investments for projects which lessen risk to local residents and property, may also pay economic dividends later on if legal issues arise.

However, the primary focus of hazard mitigation actions must be on capital investment decisions, and based on vulnerability. Capital investments, whether for homes, roads, public utilities, pipelines, power plants, or public works greatly determine the nature and degree of hazard vulnerability for a community. Once a capital facility is in place, very few opportunities will present themselves over the useful life of the facility to correct any errors in location or construction with respect to hazard vulnerability. It is for these reasons that zoning and other ordinances - which manage development in high vulnerability areas along with building codes and guidelines, are often the most useful mitigation approaches a city can implement.

In general, mitigation measures are the most neglected programs within emergency management. Since the priority to implement mitigation activities is generally low in comparison to perceived threat, implementation may be a timely and highly involved process. Mitigation success may be achieved however, if accurate information is portrayed through complete hazard identification and impact studies, followed by effective mitigation management. Hazard mitigation is the key to eliminating long-term risks to people and property from hazards and their effects. Preparedness for all hazards includes response and recovery plans, training, development, management of resources, and the need to mitigate each jurisdictional hazard.

This multi-jurisdictional plan evaluates the potential impacts, risks and vulnerabilities associated with natural hazards for jurisdictions in the Bear River Region. The plan supports, identifies, describes, and documents potential

mitigation projects for municipalities and the unincorporated areas in each county. The suggested actions and plan implementation contained in this document for local governments may reduce the impact severity of future disasters. Only through coordinated partnerships with emergency managers, political entities, public works officials, community planners, the general public, and other individuals working to implement this program will the goals of the plan be accomplished.

For most of the State of Utah, the planning services of the Utah Association of Governments (AOG's) have been utilized to develop the mitigation plans for all jurisdictions in the state. However, some individual jurisdictions have recently completed the plan on their own. For this plan update, Box Elder, Cache, and Rich County emergency managers requested assistance from BRAG to update the plan for the entire region.

The seven Utah Associations of Governments are comprised of the following regional entities:

1. Bear River Association of Governments
2. Wasatch Front Regional Council
3. Mountainland Association of Governments
4. Six County Association of Governments
5. Southeast Utah Association of Local Governments
6. Five County Association of Governments
7. Uintah Basin Association of Governments

Plan Purpose

This Pre-Disaster Mitigation Plan is meant to provide information regarding threats to life and property associated with natural hazards to local and State governments as well as interested agencies and the general public. The intent of this document can be summarized into several overarching goals which:

- Fulfill Federal, State, and local hazard mitigation planning requirements
- Promote pre- and post-disaster mitigation measures, short and long-range strategies

that minimize suffering, loss of life, and damage to property resulting from hazardous or potentially hazardous conditions to which citizens and institutions within the State are exposed.

- Eliminate or minimize conditions which would have an undesirable impact on our citizens, local infrastructure, economy, environment, and the well-being of local, county, and state governments.

Plan Scope

The Bear River Association of Governments (providing regional planning assistance to Cache, Rich, and Box Elder Counties) will submit a current updated plan to the Utah Division of Emergency Services. Future monitoring, evaluating, updating and implementing will take place as new incidents occur and/or every five years. The hazard mitigation plans and strategies will also be included in local planning efforts and plans.

Overall Goals

Coordinate with participating local governments to develop a regional planning process that will meet Local Mitigation Plan Review Tool provided by FEMA. Additional goals include planning to meet expectations set by the State and addressing the concerns of local jurisdictions.

Local Goals

The goals below form the basis for the development of the PDM Plan and are shown from highest to lowest priority. They are:

1. Protection of life before, during, and after the occurrence of a disaster.
2. Protection of emergency response capabilities (critical infrastructure).
3. Improved communication and warning systems.
4. Integration of appropriate emergency medical services and use medical facilities during a natural disaster event.

5. Identification of critical facilities and community infrastructure.
6. Government collaboration across jurisdictional boundaries during natural hazard events.
7. Protection of developed property, homes and businesses, industry, educational opportunities, and the cultural fabric of a community, by combining hazard loss reduction strategies with a community's environmental, cultural/historical, social, and economic needs.
8. Protection of natural resources and the environment when considering mitigation measures.

Regional Goals

1. Eliminate or reduce the long-term risk to human life and property by identifying natural hazards.
2. Aid both the private and public sectors in understanding the risks they may be exposed to from identified hazards, and work with local governments and partners to find mitigation strategies that reduce those risks.
3. Decrease liability for local governments by educating elected officials and staff on natural hazard mitigation and issues.
4. Minimize the impacts of natural hazard risks when they cannot be avoided.
5. Mitigate the impacts of damage as a result of identifying hazards.
6. Implement mitigation strategies in a way that minimizes negative environmental impacts.
7. Provide a basis for funding projects which are outlined as hazard mitigation strategies.
8. Maintain and improve a regional platform to enable communities to take advantage of shared goals, resources, and other available resources.

Prioritization of Mitigation Strategies

A guiding factor in prioritizing mitigation strategies was the principle that mitigation should provide the greatest amount of good to the greatest number of people, after considering funding, staffing, and other resource constraints.

Recurrence intervals, past events, and damage estimates compiled during the assessment of vulnerability in this plan were also considered for priority and time line values. While there was not a technical cost-benefit analysis for determining mitigation strategies during this planning process, the above criteria were considered for prioritization.

ADOPTION & UPDATING THE PLAN

Participating Jurisdictions

Table 1: Participating Jurisdictions in the Bear River Region

RICH COUNTY	CACHE COUNTY
Garden City	Amalga
Laketown	Clarkston
Randolph	Cornish Town
Woodruff	Hyde Park City
BOX ELDER COUNTY	Hyrum City
Bear River City	Lewiston City
Brigham City	Logan City
Corinne City	Mendon City
Deweyville	Millville City
Elwood	Newton
Fielding	Nibley
Garland City	North Logan City
Honeyville City	Paradise
Howell	Providence City
Mantua	Richmond City
Perry City	River Heights City
Plymouth	Smithfield City
Portage	Trenton
Snowville	Wellsville City
Tremonton City	
Willard City	

Local Adoption of The Plan

On June 1, 2015, the Draft Pre-Disaster Mitigation Plan was put on the BRAG website,

located at www.brag.utah.gov. A hard copy of the plan was also available at the BRAG office for viewing. After a 30-day public comment period, comments from communities, the public, county working groups, as well as the Utah Division of Emergency Services were integrated into the plan. The draft plan was then sent to FEMA Region VIII for review. After revisions to the draft plan were completed, letters were sent to each jurisdiction explaining the benefits of adopting a FEMA-approved plan and encouraging all 42 jurisdictions in the Bear River Region to adopt the plan. Blank promulgation forms were sent to chief elected officials, and communities were asked to adopt the plan, and send the completed promulgation forms to BRAG for inclusion as an appendix in the plan. The final plan was also made available in its entirety by section on the BRAG website found at www.brag.utah.gov. Individual links for each community section were made available.

Plan Updates & Changes

During the 2014-2015 planning process, it was determined that some aspects of the plan should be updated as needed and some should remain as they were in the 2009 version, with minor edits as needed. Background information, such as hazard definitions, the purpose for the plan, scope, goals, local adoption, and other sections remained relatively the same in both plans. However, some changes in this version were necessary, such as general document layout, the planning process, economic and demographic information updates, risk assessment methods and data, mitigation strategy updates, and the community capability assessments. Following are some of the changes that were made to these sections.

Document layout and organization has been altered to create a user friendly and accessible document. Some charts, tables, data, and other information was moved to the appendix to create a more user friendly layout. County risk assessments were renamed to provide a community emphasis, such as “Box Elder County – Community Risk Assessments” to give a sense of ownership for communities and to make the plan easier to navigate. Also, the term “Annex” was removed to avoid confusion and sections were renamed “Box Elder County Hazard Mapping,” for example, to

simplify sections.

The planning process was altered slightly as well. The first group that met about the plan was comprised of emergency managers, planners, and others involved in emergency planning in the region. BRAG staff sought input for, and built county working groups based on, meeting input and references from those initial contacts. The working groups were also added to as needed depending on what existing working group members thought was necessary. BRAG staff invited all jurisdictions in the region to send representatives as part of the working group, and invited State and Federal Agencies with land management responsibilities in the Bear River Region. Any other suggestions for members were integrated into the working group as needed. The use of surveys was employed similarly to the 2009 plan, and letters and e-mails were sent regularly throughout the process to each community inviting representatives to meetings, and giving many opportunities for community involvement. BRAG staff also made many phone calls to communities to solicit information critical to the plan.

Understandably, economic and demographic data was updated in the plan, as was historical data and natural hazard event data. New sources were sought where data was limited in the 2009 version, such as historical landslide data, historical wildfire data, and earthquake epicentre data.

New risk assessment methods and up-to-date GIS data was also used in this plan in an attempt to reflect current conditions (See Appendix C). New landslide susceptibility, geological faults, wildfire, dam failure, and floodplain data was utilized. Steep slopes were added to address some problem soil areas. The overlay analysis methodology from 2009 proved to be useful for this analysis, although parcel data and any available new hazards data was used. Model Builder in ArcGIS was used to make the analyses uniform for the entire region where possible. Rich County still had incomplete parcel data, and it is anticipated it will be incomplete for some time. However, updated recorder data was linked to the GIS layers to create a more accurate data set where it existed.

A new wildfire hazard data set was also used for this plan update. Data from the West Wide Wildfire Risk Assessment, completed in 2013 by the Oregon Department of Forestry, was utilized to provide a more accurate risk assessment region-wide.

Mitigation strategies were also updated through interaction with participating communities. Some strategies from 2009 were completed, those that were still applicable were carried over into this plan, and new strategies were created by local governments to better address mitigation issues.

Some communities in the region have either grown and added new employees or now have greater data and GIS capabilities. These capabilities were documented at the end of this document as well, with the realization that some communities will continue to have needs for hazard mitigation planning assistance from BRAG and other State and Federal agencies in the future. BRAG staff will continue to be a resource for those communities.

MITIGATION STRATEGIES IMPLEMENTED FROM 2009-2015

- **North Logan** - Earthquake training (Utah Shakeout). Working with canal companies. Wildfire planning. Geotechnical Requirements. Using flood areas as recreational opportunities.
- **Logan** - Improvements were made to 600 W bridge to prevent overtopping road during floods. Additional water storage still ongoing for the next 5 years.
- **Richmond** - Incorporated the bulk of the strategies used in the 2009 program, but did make some minor changes. Worked with irrigation company to minimize flooding.
- **Trenton** – Earthquake, landslide, and wildfire planning.
- **River Heights** - Sponsored a seminar on the dangers of radon gas, and several residents have installed fan driven ventilation systems.
- **Millville** - Regulating building in wildfire prone areas. Earthquake hazards planning

and ordinance work.

- **Smithfield** - Identified the floodplain running through the city, and have taken steps through the cities ordinance and general plan to minimize the effects of flooding. Smithfield works through LDS stakes with emergency preparedness.
- **Tremonton** - Wildfire protection: Cooperative Wildfire Protection Plan (CWPP) was established Feb 28, 2013 involving residents of Tremonton, Garland, and Box Elder County (unincorporated). Resulting from this agreement and in cooperation with FFSL, US Dept. of Agriculture, Box Elder County, Tremonton, and Garland Fire Departments, a fire break was created above affected homes to protect both residential areas and grazing land.
- **Garland** - Holding table top trainings once a month. These table tops have been covering waterlines, communication, health of others.
- **Brigham City** - Work with the Utah Division of Water Rights and other groups to utilize Emergency Action Plans on a local level. Develop or update an environmental safety zone - with identified hazard areas, disclosure/education, hazard maps. Wildfire Defense Program. Perform seismic upgrades to existing Brigham City Library to meet current building codes. Protect 36" Penstock water line coming from Mantua to Brigham City by burying it. Trim trees to keep limbs clear of electrical power system. Reconcile current development with soon to be adopted FEMA floodplain maps for Box Elder County for NFIP communities. For non-NFIP communities, talk with Utah ESHS about the benefits of NFIP.

In this version of the plan, individual community sections were created to make the document more accessible to local community leaders, staff, and emergency managers/planners on the local, state, and federal levels.

A more robust risk analysis was also completed for this plan update. Better GIS data was used where available, including a wildfire risk data set created by Oregon State University in 2013. Updated parcel and US Census data was also utilized, as well as updated geologic hazards data from the Utah Geological Survey. Potential loss analyses were also more comprehensive, and included new data sets such as:

- Natural gas line data (Questar Gas)
- Agricultural amenities
- Recreational amenities
- Natural amenities
- More comprehensive list of Critical Facilities

BRAG staff also tried to make the meetings for the update process more interesting and appealing to elected officials and others. Six natural hazards specialists from state and federal agencies were invited to give presentations at the three county mitigation strategy meetings held. They presented realistic and feasible ideas for mitigating the effects of wildfire, flood, landslides, geologic hazards, and severe weather. Elected officials and staff were invited to ask questions and learn from these specialists.

OTHER CHANGES FROM 2009-2015

One of the most substantial changes to this updated plan is the document layout and organization. Most of the large charts and extraneous background information was consolidated and put in the appendix.