

# **Natural Hazard Pre-Disaster Mitigation Plan**

**Produced by the Wasatch Front Regional Council in  
conjunction with Davis, Morgan, Salt Lake, Tooele and  
Weber Counties, Cities and Special Service Districts**

**Assistance and guidance provided by the  
Utah Division of Homeland Security**

**November, 2008**

## Introduction

The State of Utah is vulnerable to natural and technological (human-caused) hazards that threaten the health, welfare and security of our citizens. The cost of response to and recovery from potential disasters can be substantially reduced when attention is turned to mitigating their impacts and effects before they occur or re-occur.

Hazard mitigation is defined as any cost-effective action that has the effect of reducing, limiting, or preventing vulnerability of people, property, and/or the environment to potentially damaging, harmful, or costly hazards. Hazard mitigation actions, which can be used to eliminate or minimize the risk to life and property, fall into three categories: first, those that keep the hazard away from people, property and structures; second, those that keep people, property and structures away from the hazard; and third, 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 actions must be practical, cost effective, environmentally and politically acceptable. Actions taken to limit the vulnerability of society to hazards must not in themselves be more costly than the anticipated damages.

Capital investment decisions must be considered in conjunction with natural hazard vulnerability. Capital investments can include homes, roads, public utilities, pipelines, power plants, chemical plants, warehouses and public works facilities. These decisions can influence the degree of hazard vulnerability of a community. Once a capital facility is in place, 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 ordinances, which could restrict development in high vulnerability areas, and building codes, which could ensure that new buildings are built to withstand the damaging forces of hazards, are the most useful mitigation approaches a city can implement.

Often, hazard mitigation is a neglected aspect within emergency management. When local governments place a low priority on mitigation implementation activities relative to the perceived threat, some important mitigation measures may be neglected in favor of higher priority activities. Mitigation success can 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 greatly reducing long-term risk to people and property from natural 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.

## **A. Purpose**

The purposes of this plan are (1) identify threats to the community, (2) create mitigation strategies to address those threats, (3) develop long-term mitigation planning goals and objectives, and (4) to fulfill federal, state and local hazard mitigation planning obligations. Mitigation actions in particular would serve to minimize conditions that have an undesirable impact on our citizens, the economy, environment and the well being of the State of Utah. This plan is intended to enhance the awareness and to provide mitigation strategies for elected officials, agencies and the public of these hazards and their associated threat to life and property. The plan also details what actions can be taken to help prevent or reduce hazard vulnerability to each jurisdiction.

## **B. Scope**

The Wasatch Front Natural Hazards Pre-Disaster Mitigation (PDM) Plan was developed in accordance with the requirements of the FEMA Section 322 regulations, the Utah Division of Homeland Security (DHLS) and local planning agencies. The goal of this plan is to assist the five counties of the Wasatch Front region (Davis, Morgan, Salt Lake, Tooele, and Weber) in reducing the costs of natural disasters by providing comprehensive hazards identification, risk assessment, vulnerability analysis, mitigation strategy and implementation schedule. Regulations set forth by FEMA were followed during the development of this plan. Future monitoring, evaluating, updating and implementation will occur following any natural disaster or every five years.

## **C. Authority**

### **Federal**

Public Law (PL) 93-288 as amended, established the basis for federal hazard mitigation activity in 1974. A section of this Act requires the identification, evaluation and mitigation of hazards as a prerequisite for state receipt of future disaster assistance outlays. Since 1974, many additional programs, regulations and laws have expanded on the original legislation to establish hazard mitigation as a priority at all levels of government. When PL 93-288 was amended by the Stafford Act, several additional provisions were added that provide for the availability of significant mitigation measures in the aftermath of Presidential declared disasters. Civil Preparedness Guide 1-3, Chapter 6- Hazard Mitigation Assistance Programs, places emphasis on hazard mitigation planning directed toward hazards with high impact and threat potential.

President Clinton signed the Disaster Mitigation Act of 2000 (DMA 2000) into law on October 30, 2000. Section 322 defines mitigation planning requirements for state, local and tribal governments. Under Section 322, states are eligible for an increase in the federal share of hazard mitigation, if they submit a mitigation plan (which is a summary of local and/or regional mitigation plans) that identifies natural hazards, risks, vulnerabilities and actions to mitigate risks.

## **State**

Some examples of legislation enhancing the ability of government and persons to mitigate, respond and recover from natural disasters include the Governor's Emergency Operation Directive, The Robert T. Stafford Disaster Relief and Emergency Assistance Act, amendments to Public Law 93-288, as amended, Title 44, CFR, Federal Emergency Management Agency Regulations, as amended, State Emergency Management Act of 1981, Utah Code 53-2, 63-5, Disaster Response Recovery Act, 63-5A, Executive Order of the Governor 11, and the Emergency Interim Succession Act, 63-5B.

## **Local**

Local governments play an essential role in implementing effective mitigation. For the purposes of this plan, local governments include not only cities and counties, but also special service districts with elected boards. Each local government will review all present or potential damages, losses and related impacts associated with natural hazards to determine the need or requirement for mitigation action and planning. In the cities and counties making up the Wasatch Front Region, the local executives responsible for carrying out plans and policies are the county commissioners and city or town mayors and administrators. Local governments must be prepared to participate in the post-disaster hazard mitigation team process and pre-mitigation planning as outlined in this document in order to effectively protect their citizens.

## **Association of Governments**

The Association of Governments have been duly constituted under the authority of Title XI, Chapter 13, Utah Code Annotated, 1953, as amended (The Inter-local Cooperation Act) and pursuant to Section 3 of the Executive Order of the Governor of the State of Utah, dated May 27, 1970, with the authority to conduct planning studies and to provide services to its constituent jurisdictions.

## **D. Goals and Objectives**

The goals and objectives of the PDM plan include coordinating with local governments to develop a regional planning process that meets each planning component identified in the FEMA Region VIII Crosswalk document, Utah Division of Homeland Security (DHLS) planning expectation and local input. Another goal is to meet the need of reducing risk from natural and technological hazards in Utah through the implementation of and updating of regional plans.

## Short Term Local Goals

The following general goals were used in the development of the PDM Plan. They are shown from highest to lowest priority.

1. Life safety protection.
2. Eliminate and/or reduce property damage.
3. Protect emergency response capabilities (critical infrastructure).
4. Protect/create communication and warning systems.
5. Protect emergency medical services and medical facilities.
6. Ensure mobile resource survivability.
7. Protect critical facilities.
8. Ensure government continuity.
9. Protect developed property, homes, businesses, industry, education opportunities and the cultural fabric of a community. Combine hazard loss reduction efforts with the environmental, social and economic needs of the community.
10. Protect natural resources and the environment.
11. Promote public awareness through education of community hazards and mitigation measures.
12. Preserve and/or restore natural features.

## Long Term Local Goals

1. Eliminate or reduce long-term risk to human life and property.
2. Aid private and public sectors in understanding the risks they may be exposed to and identify mitigation strategies to reduce those risks.
3. Avoid risk of exposure to natural and technological hazards.
4. Minimize the impacts of risks that cannot be avoided.
5. Mitigate the impacts of damage as a result of identified hazards.
6. Accomplish mitigation strategies in such a way that negative environmental impacts are minimized.
7. Provide a basis for prioritizing and funding mitigation projects.
8. Establish a regional platform to enable the community to take advantage of shared goals and resources.

## Objectives

The following objectives are meant to serve as a measure upon which individual hazard mitigation strategies can be evaluated. These objectives become especially important when two or more projects are competing for limited resources.

1. Identify persons, agencies or organizations responsible for implementation.
2. Project a time frame for implementation.
3. Explain how the project will be financed including the conditions for financing and implementation (as information is available).
4. Identify alternative measures, should financing not be available.

5. Be consistent with, support, and help implement the goals and objectives or hazard mitigation plans already in place.
6. Projects should significantly reduce potential damages to public and/or private property and/or reduce the cost of state and federal recovery for future disasters.
7. Projects should be practical, cost-effective and environmentally sound after consideration of the options.
8. Projects should address a repetitive problem, or one that has the potential to have a major impact on an area or population.
9. Projects should meet applicable permit requirements.
10. Discourage development in hazardous areas.
11. Projects should contribute to short and long term solutions.
12. Project benefits should outweigh the costs.
13. Projects should have manageable maintenance and modification costs.
14. Projects should accomplish multiple objectives when possible.
15. Projects should be implemented using existing resources, agencies and programs when possible.

# Executive Summary

## Plan Mission

The Wasatch Front Regional Council (WFRC) developed the PDM Plan in partnership with the jurisdictions it serves to substantially and permanently reduce the region's vulnerability to natural hazards. The Plan is intended to promote sound public policy and protect or reduce the vulnerability of the citizens, critical facilities, infrastructure, private property and the natural environment within the Region. This can be achieved by increasing public awareness, documenting resources for risk reduction and loss-prevention and identifying activities to guide the development of a less vulnerable and more sustainable community.

## Plan Update

This plan represents an update of the PDM plan that was approved by the counties, the state and by FEMA in 2003. All of the demographic data, maps, vulnerability assessments, and mitigation strategies have been revised to reflect the constant growth throughout the five county area. Development pressures in hazard areas will continue to increase the risk to residents.

## Plan Organization

The Plan was developed and organized within the rules and regulations established under 44 Code of Federal Regulations (CFR), Section 201.6. The plan contains a discussion on the purpose and methodology used to develop the plan, a profile on communities within WFRC, as well as a hazard identification study and a vulnerability analysis of eight hazards. To assist in the explanation of the above-identified contents there are several appendices included which provide more detail on specific subjects. This is intended to improve the ability of communities within the WFRC planning district to respond to emergencies and disasters. It will also document valuable local knowledge on the most efficient and effective ways to reduce loss.

## Plan Funding

The Plan has been funded and developed under the PDM Program provided by the Federal Emergency Management Agency (FEMA) and the Utah Department of Public Safety, Division of Homeland Security (DHLS).

## Plan Participation

Plan participation was completed as a result of a collaborative effort between the WFRC, DHLS, city and county emergency managers, fire departments, sheriff's offices, public works departments, planning commissions, assessor's offices, City and county geographic information systems (GIS) departments, special service districts, school districts, elected officials, public employees, and citizens of the cities and towns within Davis, Morgan, Salt Lake, Tooele, and Weber Counties. Interviews were conducted with stakeholders from the communities, and workshops were conducted during the plan development phase. Additionally, through public hearings, workshops, and draft plan displays, ample opportunity was provided for public participation. Any comments, questions, and discussions resulting from these activities were given strong consideration in the development of this plan.

## **Hazards Identified**

It was suggested by the DHLS that, at a minimum, the PDM Plan address the hazards of: earthquake, flood, landslide, problem soils, wildfire, dam failure, severe weather and drought. However, there are other hazards that were identified which are not in the minimum criteria established by DHLS that were added to the discussion.

Therefore, the hazard identification study recognized the following natural hazards as being the most prevalent and posing the most potential risk to the counties and towns within the WFRC five county planning districts. It is recognized that Dam Failure is not a natural hazard. However, the impact from a catastrophic dam failure would likely be so severe that it warrants inclusion into the plan.

- Earthquake
- Flood
- Drought
- Landslide
- Wildfire
- Dam Failure
- Severe Weather
- Insect Infestation

## **Acknowledgements**

The Wasatch Front Regional Council would like to extend their appreciation to the following agencies, which assisted in the development of this plan.

- Utah Division of Homeland Security
- Federal Emergency Management Agency
- National Weather Service
- National Climate Data Center
- Utah Army Corps of Engineers
- Utah Geologic Survey
- Utah Division of Forestry, Fire and State Lands
- Utah Department of Agriculture
- Utah Avalanche Center
- Utah Automated Geographic Resource Center
- University of Utah
- University of Utah Seismic Station
- Utah State University (USU)
- Davis, Morgan, Salt Lake, Tooele, Weber Councils of Government
- Associations of Governments
- Utah Association of Special Districts
- Utah Office of Education
- Davis County and municipalities including: Bountiful, Centerville, Clearfield, Clinton, Farmington, Fruit Heights, Kaysville, Layton, North Salt Lake, South Weber, Sunset, Syracuse, West Bountiful, West Point, and Woods Cross
- Davis County elected officials and planning commission members

- Davis County emergency manager Sgt. Brent Peters and DeeEll Fifield, consultant
- Davis County agencies including; public works, GIS office, assessor's office, Local Emergency Planning Committee (LEPC), Sheriff's Office emergency services division, fire departments, school district, special service district
- Morgan County and Morgan City
- Morgan County emergency manager, Terry Turner
- Morgan County elected officials
- Morgan County agencies including; the planning commission, public works, assessor's office, school district, special service districts
- Morgan County residents and other interested members of the public
- Tooele County and municipalities including Grantsville , Ophir , Rush Valley, Stockton, Tooele City, Vernon, and Wendover, school district, special service districts
- Tooele County emergency manager Kari Sagers and PDM Planner Marianne Rutishauser
- Tooele County elected officials
- Tooele County agencies including engineering department, planning commission, assessor's office, the Utah State University Extension Office, and the Natural Resource Conservation Service
- Tooele County public and other interested members
- Salt Lake County and municipalities including Alta, Bluffdale, Draper, Herriman, Holladay, Cottonwood Heights, Midvale, Murray, Riverton, Salt Lake City, Sandy, South Jordan, South Salt Lake, Taylorsville, West Jordan, and West Valley City
- Salt Lake County emergency management to include Kate Smith, Matthew Hurtes and Matt Morrison
- Salt Lake County elected officials
- Salt Lake County agencies including public works, GIS departments, engineering departments, planning commission, assessor's office, Local Emergency Planning Committee (LEPC), emergency services division, fire and sheriff's office, school districts, special service districts
- Salt Lake County public and interested members
- Weber County and municipalities including Farr West, Harrisville, Hooper, Huntsville, Marriott-Slaterville, North Ogden, Ogden, Plain City, Pleasant View, Riverdale, Roy, South Ogden, Uintah, Washington Terrace, and West Haven, school districts, special service districts
- Weber County emergency manager, Lance Peterson
- Weber County elected officials
- Weber County agencies including planning commission, GIS department, fire and sheriff's office, emergency services division
- Weber Basin Water Conservancy District

Resolution Instructions: Attached is a sample resolution that may be used by your jurisdiction to adopt the updated Pre-Disaster Mitigation Plan, 2008. This is a non-binding resolution. Every jurisdiction needs to adopt the Plan in order to be eligible for planning and project funding from the Pre-Disaster Mitigation Competitive Grant Program and FEMA Disaster Relief funding. Please return the adopted resolution no later than December 20, 2008 to DeeEll Fifield, Wasatch Front Regional Council, 295 N. Jimmy Doolittle Road, Salt Lake City, UT 84116. Contact DeeEll Fifield if you have any questions or if changes are needed to the resolution before adoption, 801-363-4250 or [dfifield@wfrfc.org](mailto:dfifield@wfrfc.org).

## Sample Resolution

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION ADOPTING THE NATURAL HAZARD PRE-DISASTER MITIGATION PLAN AS REQUIRED BY THE FEDERAL DISASTER MITIGATION AND COST REDUCTION ACT OF 2000.**

(Name of Jurisdiction)                    **Johnson City** \_\_\_\_\_  
(Governing Body)                        **City Council** \_\_\_\_\_  
(Address)                                    **100 Main Street, Johnson City, UT 84001** \_\_\_\_\_  
\_\_\_\_\_

WHEREAS, President William J. Clinton signed H.R. 707, the Disaster Mitigation and Cost Reduction Act of 2000, into law on October 30, 2000; and,

WHEREAS, the Disaster Mitigation Act of 2000 requires all jurisdictions to be covered by a Pre-Disaster Hazard Mitigation Plan to be eligible for Federal Emergency Management Agency post-disaster funds; and,

WHEREAS, the *Natural Hazard Pre-Disaster Mitigation Plan* has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEREAS, **Johnson City** is within the Wasatch Front Region and participated in the update of the multi-jurisdictional plan, the *Natural Hazard Pre-Disaster Mitigation Plan*; and,

WHEREAS, **Johnson City** is a local unit of government that has afforded its citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and,

WHEREAS, **Johnson City** is concerned about mitigating potential losses and has determined that it would be in the best interest of the community to adopt the *Natural Hazard Pre-Disaster Mitigation Plan*;

NOW THEREFORE, BE IT RESOLVED by **Johnson City Council** that **Johnson City** adopts the *Natural Hazard Pre-Disaster Mitigation Plan* as this jurisdiction's Multi-Hazard Mitigation Plan.

ADOPTED this **XX day of XX, 2008** at the meeting of the **Johnson City Council**.

Signed: **Chief Elected Official** \_\_\_\_\_  
          **City Council** \_\_\_\_\_  
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