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Ada County
Hazard Mitigation Plan Update

APPENDIX A.
ACRONYMS AND DEFINITIONS

July 2011

APPENDIX A. ACRONYMS AND DEFINITIONS

ACRONYMS

BLM—Bureau of Land Management
CFR—Code of Federal Regulations
cfs—cubic feet per second
CIP—Capital Improvement Plan
CRS—Community Rating System
DFIRM—Digital Flood Insurance Rate Maps
DHS—Department of Homeland Security
DMA —Disaster Mitigation Act
EAP—Emergency Action Plan
EPA—U.S. Environmental Protection Agency
ESA—Endangered Species Act
FCD—Flood Control District
FEMA—Federal Emergency Management Agency
FERC—Federal Energy Regulatory Commission
FIRM—Flood Insurance Rate Map
FIS—Flood Insurance Study
FMA— Flood Mitigation Assistance Grant Program
FRCC—Fire Regime Condition Class
GIS—Geographic Information System
HAZUS-MH—Hazards, United States Multi Hazard
HMGP—Hazard Mitigation Grant Program
IBC—International Building Code
IBHS—Idaho Bureau of Homeland Security
IDWR—Idaho Department of Water Resources
IGS—Idaho Geological Survey
IRC—International Residential Code
MM—Modified Mercalli Scale
NEHRP—National Earthquake Hazards Reduction Program
NFIP—National Flood Insurance Program

NOAA—National Oceanic and Atmospheric Administration

NWS—National Weather Service

PDM—Pre-Disaster Mitigation Grant Program

PDI—Palmer Drought Index

PGA—Peak Ground Acceleration

PHDI—Palmer Hydrological Drought Index

SFHA—Special Flood Hazard Area

SPI—Standardized Precipitation Index

TOD—Transit-Oriented Development

USGS—U.S. Geological Survey

WUI—Wildland Urban Interface

DEFINITIONS

100-Year Flood: The term “100-year flood” can be misleading. The 100-year flood does not necessarily occur once every 100 years. Rather, it is the flood that has a 1 percent chance of being equaled or exceeded in any given year. Thus, the 100-year flood could occur more than once in a relatively short period of time. The Federal Emergency Management Agency (FEMA) defines it as the 1 percent annual chance flood, which is now the standard definition used by most federal and state agencies and by the National Flood Insurance Program (NFIP).

Acre-Foot: An acre-foot is the amount of water it takes to cover 1 acre to a depth of 1 foot. This measure is used to describe the quantity of storage in a water reservoir. An acre-foot is a unit of volume. One acre foot equals 7,758 barrels; 325,829 gallons; or 43,560 cubic feet. An average household of four will use approximately 1 acre-foot of water per year.

Asset: An asset is any man-made or natural feature that has value, including, but not limited to, people; buildings; infrastructure, such as bridges, roads, sewers, and water systems; lifelines, such as electricity and communication resources; and environmental, cultural, or recreational features such as parks, wetlands, and landmarks.

Base Flood: The flood having a 1% chance of being equaled or exceeded in any given year, also known as the “100-year” or “1% chance” flood. The base flood is a statistical concept used to ensure that all properties subject to the National Flood Insurance Program (NFIP) are protected to the same degree against flooding.

Basin: A basin is the area within which all surface water—whether from rainfall, snowmelt, springs, or other sources—flows to a single water body or watercourse. The boundary of a river basin is defined by natural topography, such as hills, mountains and ridges. Basins are also referred to as “watersheds” and “drainage basins.”

Benefit: A benefit is a net project outcome and is usually defined in monetary terms. Benefits may include direct and indirect effects. For the purposes of benefit-cost analysis of proposed mitigation measures, benefits are limited to specific, measurable, risk reduction factors, including reduction in expected property losses (buildings, contents and functions) and protection of human life.

Benefit/Cost Analysis: A benefit/cost analysis is a systematic, quantitative method of comparing projected benefits to projected costs of a project or policy. It is used as a measure of cost effectiveness.

Building: A building is defined as a structure that is walled and roofed, principally aboveground, and permanently fixed to a site. The term includes manufactured homes on permanent foundations on which the wheels and axles carry no weight.

Capability Assessment: A capability assessment provides a description and analysis of a community's current capacity to address threats associated with hazards. The assessment includes two components: an inventory of an agency's mission, programs and policies, and an analysis of its capacity to carry them out. A capability assessment is an integral part of the planning process in which a community's actions to reduce losses are identified, reviewed, and analyzed, and the framework for implementation is identified. The following capabilities were reviewed under this assessment:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability

Community Rating System (CRS): The CRS is a voluntary program under the NFIP that rewards participating communities (provides incentives) for exceeding the minimum requirements of the NFIP and completing activities that reduce flood hazard risk by providing flood insurance premium discounts.

Critical Area: An area defined by state or local regulations as deserving special protection because of unique natural features or its value as habitat for a wide range of species of flora and fauna. A sensitive/critical area is usually subject to more restrictive development regulations.

Critical Facility: Facilities and infrastructure that are critical to the health and welfare of the population. These become especially important after any hazard event occurs. For the purposes of this plan update, critical facilities include:

- Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water reactive materials;
- Hospitals, nursing homes, and housing likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a hazard event.
- Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for disaster response before, during, and after hazard events, and
- Public and private utilities, facilities and infrastructure that are vital to maintaining or restoring normal services to areas damaged by hazard events.
- Government facilities.

Cubic Feet per Second (cfs): Discharge or river flow is commonly measured in cfs. One cubic foot is about 7.5 gallons of liquid.

Dam: Any artificial barrier or controlling mechanism that can or does impound 10 acre-feet or more of water.

Dam Failure: Dam failure refers to a partial or complete breach in a dam (or levee) that impacts its integrity. Dam failures occur for a number of reasons, such as flash flooding, inadequate spillway size,

mechanical failure of valves or other equipment, freezing and thawing cycles, earthquakes, and intentional destruction.

Debris Avalanche: Volcanoes are prone to debris and mountain rock avalanches that can approach speeds of 100 mph.

Debris Flow: Dense mixtures of water-saturated debris that move down-valley; looking and behaving much like flowing concrete. They form when loose masses of unconsolidated material are saturated, become unstable, and move down slope. The source of water varies but includes rainfall, melting snow or ice, and glacial outburst floods.

Debris Slide: Debris slides consist of unconsolidated rock or soil that has moved rapidly down slope. They occur on slopes greater than 65 percent.

Disaster Mitigation Act of 2000 (DMA); The DMA is Public Law 106-390 and is the latest federal legislation enacted to encourage and promote proactive, pre-disaster planning as a condition of receiving financial assistance under the Robert T. Stafford Act. The DMA emphasizes planning for disasters before they occur. Under the DMA, a pre-disaster hazard mitigation program and new requirements for the national post-disaster hazard mitigation grant program (HMGP) were established.

Drainage Basin: A basin is the area within which all surface water- whether from rainfall, snowmelt, springs or other sources- flows to a single water body or watercourse. The boundary of a river basin is defined by natural topography, such as hills, mountains and ridges. Drainage basins are also referred to as **watersheds** or **basins**.

Drought: Drought is a period of time without substantial rainfall or snowfall from one year to the next. Drought can also be defined as the cumulative impacts of several dry years or a deficiency of precipitation over an extended period of time, which in turn results in water shortages for some activity, group, or environmental function. A hydrological drought is caused by deficiencies in surface and subsurface water supplies. A socioeconomic drought impacts the health, well being, and quality of life or starts to have an adverse impact on a region. Drought is a normal, recurrent feature of climate and occurs almost everywhere.

Earthquake: An earthquake is defined as a sudden slip on a fault, volcanic or magmatic activity, and sudden stress changes in the earth that result in ground shaking and radiated seismic energy. Earthquakes can last from a few seconds to over 5 minutes, and have been known to occur as a series of tremors over a period of several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties may result from falling objects and debris as shocks shake, damage, or demolish buildings and other structures.

Exposure: Exposure is defined as the number and dollar value of assets considered to be at risk during the occurrence of a specific hazard.

Extent: The extent is the size of an area affected by a hazard.

Fire Behavior: Fire behavior refers to the physical characteristics of a fire and is a function of the interaction between the fuel characteristics (such as type of vegetation and structures that could burn), topography, and weather. Variables that affect fire behavior include the rate of spread, intensity, fuel consumption, and fire type (such as underbrush versus crown fire).

Fire Frequency: Fire frequency is the broad measure of the rate of fire occurrence in a particular area. An estimate of the areas most likely to burn is based on past fire history or fire rotation in the area, fuel conditions, weather, ignition sources (such as human or lightning), fire suppression response, and other factors.

Firewise: National Fire Protection Association program encouraging local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters and others in the effort to protect people and property from the risk of wildfire. The program is co-sponsored by the U.S. Forest Service, the U.S. Department of the Interior, and the National Association of State Foresters.

Flash Flood: A flash flood occurs with little or no warning when water levels rise at an extremely fast rate

Flood Insurance Rate Map (FIRM): FIRMs are the official maps on which the Federal Emergency Management Agency (FEMA) has delineated the Special Flood Hazard Area (SFHA).

Flood Insurance Study: A report published by the Federal Insurance and Mitigation Administration for a community in conjunction with the community's Flood Insurance rate Map. The study contains such background data as the base flood discharges and water surface elevations that were used to prepare the FIRM. In most cases, a community FIRM with detailed mapping will have a corresponding flood insurance study.

Floodplain: Any land area susceptible to being inundated by flood waters from any source. A flood insurance rate map identifies most, but not necessarily all, of a community's floodplain as the Special Flood Hazard Area (SFHA).

Floodway: Floodways are areas within a floodplain that are reserved for the purpose of conveying flood discharge without increasing the base flood elevation more than 1 foot. Generally speaking, no development is allowed in floodways, as any structures located there would block the flow of floodwaters.

Floodway Fringe: Floodway fringe areas are located in the floodplain but outside of the floodway. Some development is generally allowed in these areas, with a variety of restrictions. On maps that have identified and delineated a floodway, this would be the area beyond the floodway boundary that can be subject to different regulations.

Freeboard: Freeboard is the margin of safety added to the base flood elevation.

Frequency: For the purposes of this plan, frequency refers to how often a hazard of specific magnitude, duration, and/or extent is expected to occur on average. Statistically, a hazard with a 100-year frequency is expected to occur about once every 100 years on average and has a 1 percent chance of occurring any given year. Frequency reliability varies depending on the type of hazard considered.

Fujita Scale of Tornado Intensity: Tornado wind speeds are sometimes estimated on the basis of wind speed and damage sustained using the Fujita Scale. The scale rates the intensity or severity of tornado events using numeric values from F0 to F5 based on tornado wind speed and damage. An F0 tornado (wind speed less than 73 miles per hour (mph)) indicates minimal damage (such as broken tree limbs), and an F5 tornado (wind speeds of 261 to 318 mph) indicates severe damage.

Goal: A goal is a general guideline that explains what is to be achieved. Goals are usually broad-based, long-term, policy-type statements and represent global visions. Goals help define the benefits that a plan

is trying to achieve. The success of a hazard mitigation plan is measured by the degree to which its goals have been met (that is, by the actual benefits in terms of actual hazard mitigation).

Geographic Information System (GIS): GIS is a computer software application that relates data regarding physical and other features on the earth to a database for mapping and analysis.

Hazard: A hazard is a source of potential danger or adverse condition that could harm people and/or cause property damage.

Hazard Mitigation Grant Program (HMGP): Authorized under Section 202 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the HMGP is administered by FEMA and provides grants to states, tribes and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster

Hazards U.S. Multi-Hazard (HAZUS-MH) Loss Estimation Program: HAZUS-MH is a GIS-based program used to support the development of risk assessments as required under the DMA. The HAZUS-MH software program assesses risk in a quantitative manner to estimate damages and losses associated with natural hazards. HAZUS-MH is FEMA’s nationally applicable, standardized methodology and software program and contains modules for estimating potential losses from earthquakes, floods and wind hazards. HAZUS-MH has also been used to assess vulnerability (exposure) for other hazards.

Hydraulics: Hydraulics is the branch of science or engineering that addresses fluids (especially water) in motion in rivers or canals, works and machinery for conducting or raising water, the use of water as a prime mover, and other fluid-related areas.

Hydrology: Hydrology is the analysis of waters of the earth. For example, a flood discharge estimate is developed by conducting a hydrologic study.

Intensity: For the purposes of this plan, intensity refers to the measure of the effects of a hazard.

Inventory: The assets identified in a study region comprise an inventory. Inventories include assets that could be lost when a disaster occurs and community resources are at risk. Assets include people, buildings, transportation, and other valued community resources.

Landslide: Landslides can be described as the sliding movement of masses of loosened rock and soil down a hillside or slope. Fundamentally, slope failures occur when the strength of the soils forming the slope exceeds the pressure, such as weight or saturation, acting upon them.

Lightning: Lightning is an electrical discharge resulting from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a “bolt,” usually within or between clouds and the ground. A bolt of lightning instantaneously reaches temperatures approaching 50,000°F. The rapid heating and cooling of air near lightning causes thunder. Lightning is a major threat during thunderstorms. In the United States, 75 to 100 Americans are struck and killed by lightning each year (see <http://www.fema.gov/hazard/thunderstorms/thunder.shtm>).

Liquefaction: Liquefaction is the complete failure of soils, occurring when soils lose shear strength and flow horizontally. It is most likely to occur in fine grain sands and silts, which behave like viscous fluids when liquefaction occurs. This situation is extremely hazardous to development on the soils that liquefy, and generally results in extreme property damage and threats to life and safety.

Local Government: Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.

Magnitude: Magnitude is the measure of the strength of an earthquake, and is typically measured by the Richter scale. As an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.

Mass movement: A collective term for landslides, mudflows, debris flows, sinkholes and lahars.

Mitigation: A preventive action that can be taken in advance of an event that will reduce or eliminate the risk to life or property.

Mitigation Actions: Mitigation actions are specific actions to achieve goals and objectives that minimize the effects from a disaster and reduce the loss of life and property.

Objective: For the purposes of this plan, an objective is defined as a short-term aim that, when combined with other objectives, forms a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable.

Peak Ground Acceleration: Peak Ground Acceleration (PGA) is a measure of the highest amplitude of ground shaking that accompanies an earthquake, based on a percentage of the force of gravity.

Preparedness: Preparedness refers to actions that strengthen the capability of government, citizens and communities to respond to disasters.

Presidential Disaster Declaration: These declarations are typically made for events that cause more damage than state and local governments and resources can handle without federal government assistance. Generally, no specific dollar loss threshold has been established for such declarations. A Presidential Disaster Declaration puts into motion long-term federal recovery programs, some of which are matched by state programs, designed to help disaster victims, businesses and public entities.

Probability of Occurrence: The probability of occurrence is a statistical measure or estimate of the likelihood that a hazard will occur. This probability is generally based on past hazard events in the area and a forecast of events that could occur in the future. A probability factor based on yearly values of occurrence is used to estimate probability of occurrence.

Repetitive Loss Property: Any NFIP-insured property that, since 1978 and regardless of any changes of ownership during that period, has experienced:

- Four or more paid flood losses in excess of \$1000.00; or
- Two paid flood losses in excess of \$1000.00 within any 10-year period since 1978 or
- Three or more paid losses that equal or exceed the current value of the insured property.

Return Period (or Mean Return Period): This term refers to the average period of time in years between occurrences of a particular hazard (equal to the inverse of the annual frequency of occurrence).

Riverine: Of or produced by a river. Riverine floodplains have readily identifiable channels. Floodway maps can only be prepared for riverine floodplains.

Risk: Risk is the estimated impact that a hazard would have on people, services, facilities and structures in a community. Risk measures the likelihood of a hazard occurring and resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to occurrence of a specific type of hazard. Risk also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Risk Assessment: Risk assessment is the process of measuring potential loss of life, personal injury, economic injury, and property damage resulting from hazards. This process assesses the vulnerability of people, buildings and infrastructure to hazards and focuses on (1) hazard identification; (2) impacts of hazards on physical, social and economic assets; (3) vulnerability identification; and (4) estimates of the cost of damage or costs that could be avoided through mitigation.

Risk Ranking: This ranking serves two purposes, first to describe the probability that a hazard will occur, and second to describe the impact a hazard will have on people, property and the economy. Risk estimates for the City are based on the methodology that the City used to prepare the risk assessment for this plan. The following equation shows the risk ranking calculation:

$$\text{Risk Ranking} = \text{Probability} + \text{Impact (people + property + economy)}$$

Robert T. Stafford Act: The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 100-107, was signed into law on November 23, 1988. This law amended the Disaster Relief Act of 1974, Public Law 93-288. The Stafford Act is the statutory authority for most federal disaster response activities, especially as they pertain to FEMA and its programs.

Sinkhole: A collapse depression in the ground with no visible outlet. Its drainage is subterranean. It is commonly vertical-sided or funnel-shaped.

Special Flood Hazard Area: The base floodplain delineated on a Flood Insurance Rate Map. The SFHA is mapped as a Zone A in riverine situations and zone V in coastal situations. The SFHA may or may not encompass all of a community's flood problems

Stakeholder: Business leaders, civic groups, academia, non-profit organizations, major employers, managers of critical facilities, farmers, developers, special purpose districts, and others whose actions could impact hazard mitigation.

Stream Bank Erosion: Stream bank erosion is common along rivers, streams and drains where banks have been eroded, sloughed or undercut. However, it is important to remember that a stream is a dynamic and constantly changing system. It is natural for a stream to want to meander, so not all eroding banks are "bad" and in need of repair. Generally, stream bank erosion becomes a problem where development has limited the meandering nature of streams, where streams have been channelized, or where stream bank structures (like bridges, culverts, etc.) are located in places where they can actually cause damage to downstream areas. Stabilizing these areas can help protect watercourses from continued sedimentation, damage to adjacent land uses, control unwanted meander, and improvement of habitat for fish and wildlife.

Steep Slope: Different communities and agencies define it differently, depending on what it is being applied to, but generally a steep slope is a slope in which the percent slope equals or exceeds 25%. For this study, steep slope is defined as slopes greater than 33%.

Sustainable Hazard Mitigation: This concept includes the sound management of natural resources, local economic and social resiliency, and the recognition that hazards and mitigation must be understood in the largest possible social and economic context.

Thunderstorm: A thunderstorm is a storm with lightning and thunder produced by cumulonimbus clouds. Thunderstorms usually produce gusty winds, heavy rains, and sometimes hail. Thunderstorms are usually short in duration (seldom more than 2 hours). Heavy rains associated with thunderstorms can lead to flash flooding during the wet or dry seasons.

Tornado: A tornado is a violently rotating column of air extending between and in contact with a cloud and the surface of the earth. Tornadoes are often (but not always) visible as funnel clouds. On a local scale, tornadoes are the most intense of all atmospheric circulations, and winds can reach destructive speeds of more than 300 mph. A tornado's vortex is typically a several hundred feet in diameter, and damage paths can be up to 1 mile wide and 50 miles long.

Vulnerability: Vulnerability describes how exposed or susceptible an asset is to damage. Vulnerability depends on an asset's construction and contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power. Flooding of an electric substation would affect not only the substation itself but businesses as well. Often, indirect effects can be much more widespread and damaging than direct effects.

Watershed: A watershed is an area that drains downgradient from areas of higher land to areas of lower land to the lowest point, a common drainage basin.

Wildfire: These terms refer to any uncontrolled fire occurring on undeveloped land that requires fire suppression. The potential for wildfire is influenced by three factors: the presence of fuel, topography and air mass. Fuel can include living and dead vegetation on the ground, along the surface as brush and small trees, and in the air such as tree canopies. Topography includes both slope and elevation. Air mass includes temperature, relative humidity, wind speed and direction, cloud cover, precipitation amount, duration, and the stability of the atmosphere at the time of the fire. Wildfires can be ignited by lightning and, most frequently, by human activity including smoking, campfires, equipment use and arson.

Windstorm: Windstorms are generally short-duration events involving straight-line winds or gusts exceeding 50 mph. These gusts can produce winds of sufficient strength to cause property damage. Windstorms are especially dangerous in areas with significant tree stands, exposed property, poorly constructed buildings, mobile homes (manufactured housing units), major infrastructure, and aboveground utility lines. A windstorm can topple trees and power lines; cause damage to residential, commercial, critical facilities; and leave tons of debris in its wake.

Zoning Ordinance: The zoning ordinance designates allowable land use and intensities for a local jurisdiction. Zoning ordinances consist of two components: a zoning text and a zoning map.

Ada County
Hazard Mitigation Plan Update

APPENDIX B.
PUBLIC OUTREACH

July 2011

Public Meeting Overview

Publicity:

- A paid for advertisement ran in the Idaho Statesman for 3 days (9/11 through 9/13) prior to the public meetings. (See attached).
- We received media coverage from Channel 6 for 2 days during the public meetings.
- Press releases were disseminated by ACCEM the week prior to public meetings.
- Meetings were advertised on the website.
- Promoted through CERT

Attendance:

September 14, 2010- Eagle Fire State #1- 41 attendees signed in on the attendance sheet. Several people brought their children which participated in a tour of the Fire Station. We also had representatives from the following agencies:

- CERT
- USACE
- National Weather Service
- Firewise
- Boise State University-Geology

September 15, 2010- Meridian City Hall- 35 attendees signed in on the attendance sheet. We also had representatives from the following agencies:

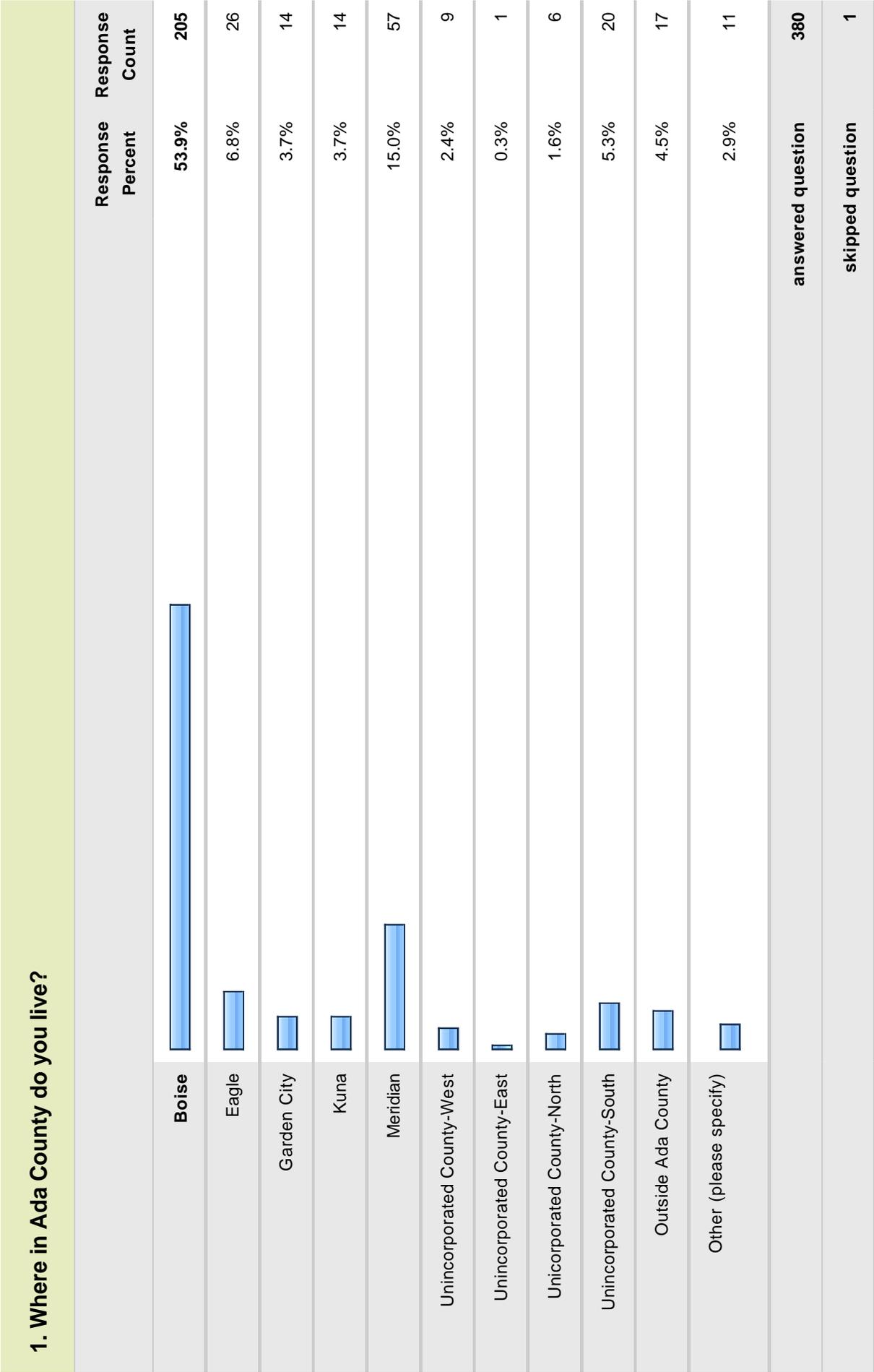
- ID State Department of Insurance
- CERT
- USACE
- National Weather Service
- Firewise
- Boise State University-Geology

September 16, 2010- Ada County Courthouse, Boise – 29 attendees signed in on the attendance sheet. We also had representatives from the following agencies:

- ID State Department of Insurance
- CERT
- USACE
- National Weather Service
- Firewise
- Boise State University-Geology

*****Average attendance was 35 with a total of 105 citizens signing in***

Copy of Ada County Survey: Natural Hazards & Mitigation Planning



2. Do you work in Ada County?

	Response Percent	Response Count
Yes	83.4%	317
No	16.6%	63
answered question		380
skipped question		1

3. Which of the following natural hazard events have you or has anyone in your household experienced in the past 20 years within Ada County? (Check all that apply)

	Response Percent	Response Count
Dam/Levee Failure	1.1%	4
Drought	18.2%	67
Earthquake	12.5%	46
Flood	13.0%	48
Hazardous Materials	8.7%	32
Household Fire	6.3%	23
Landslide	2.4%	9
Severe Weather (wind, lightning, winter storm, etc.)	62.8%	231
Wildland Fire	16.8%	62
None	28.0%	103
Other (please specify)	2.4%	9
answered question	368	
skipped question	13	

4. How prepared is your household to deal with natural hazard events?

	Not at all prepared	Somewhat prepared	Adequately prepared	Well prepared	Very well prepared	Rating Average	Response Count
Check one:	9.8% (33)	49.9% (168)	25.8% (87)	10.7% (36)	3.9% (13)	2.49	337
						answered question	337
						skipped question	44

5. Which of the following have provided you with useful information to help you be prepared? (Check all that apply)

	Response Percent	Response Count
Emergency preparedness information from a government source (e.g., federal, state, or local emergency management)	56.9%	186
Have experienced one or more natural hazards or disasters	36.1%	118
Locally provided news or other media information	46.2%	151
Schools and other academic institutions	10.7%	35
Attended meetings that have dealt with disaster preparedness	36.4%	119
Community Emergency Response Training (CERT)	27.8%	91
Other (please specify)	20.2%	66
answered question		327
skipped question		54

6. Which of the following steps has your household taken to prepare for a natural hazard event? (Check all that apply)

	Response Percent	Response Count
Received first aid/CPR training	65.8%	219
Made a fire escape plan	45.6%	152
Designated a meeting place	38.7%	129
Identified utility shutoffs	57.4%	191
Sand bags	2.4%	8
Prepared a disaster supply kit	38.7%	129
Installed smoke detectors on each level of the house	87.7%	292
Stored food and water	57.4%	191
Stored flashlights and batteries	76.9%	256
Stored a battery-powered radio	39.9%	133
Stored a fire extinguisher	67.3%	224
Stored medical supplies (first aid kit, medications)	68.8%	229
Natural hazard insurance-(Flood, Earthquake, Wildfire)	18.6%	62
Other (please specify)	4.8%	16

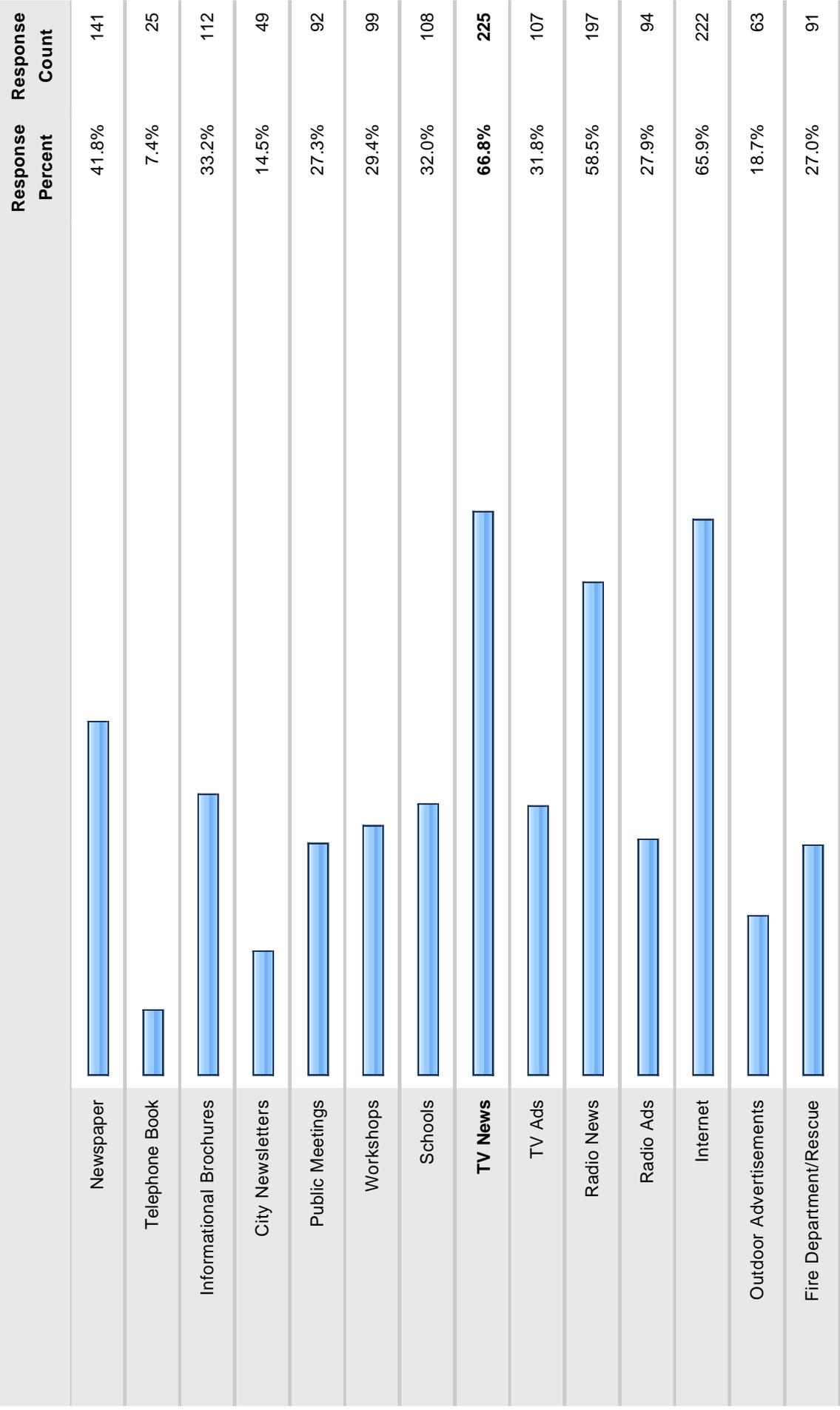
answered question	333
skipped question	48

7. How concerned are you about the following natural hazards in Ada County? (Check one response for each hazard)

	Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned	Rating Average	Response Count
Climate Change	45.6% (151)	27.2% (90)	16.9% (56)	8.5% (28)	1.8% (6)	1.94	331
Dam/Levee Failure	29.6% (98)	38.1% (126)	19.3% (64)	7.9% (26)	5.1% (17)	2.21	331
Drought	18.8% (62)	37.4% (123)	29.2% (96)	12.2% (40)	2.4% (8)	2.42	329
Earthquake	16.9% (56)	41.1% (136)	26.0% (86)	12.4% (41)	3.6% (12)	2.45	331
Flood	22.4% (74)	39.4% (130)	25.5% (84)	9.1% (30)	3.6% (12)	2.32	330
Hazardous Materials	25.4% (84)	37.2% (123)	21.8% (72)	12.7% (42)	3.0% (10)	2.31	331
Household Fire	10.3% (34)	33.0% (109)	33.9% (112)	17.3% (57)	5.5% (18)	2.75	330
Landslide	66.4% (213)	23.1% (74)	9.7% (31)	0.6% (2)	0.3% (1)	1.45	321
Severe Weather	10.5% (35)	32.5% (108)	32.8% (109)	18.7% (62)	5.4% (18)	2.76	332
Volcanic Eruption	63.9% (209)	21.4% (70)	9.2% (30)	3.4% (11)	2.1% (7)	1.58	327
Wildland Fire	22.8% (74)	22.5% (73)	24.0% (78)	23.4% (76)	7.4% (24)	2.70	325
Other	57.8% (26)	8.9% (4)	8.9% (4)	13.3% (6)	11.1% (5)	2.11	45
(Please specify other natural hazard)							22

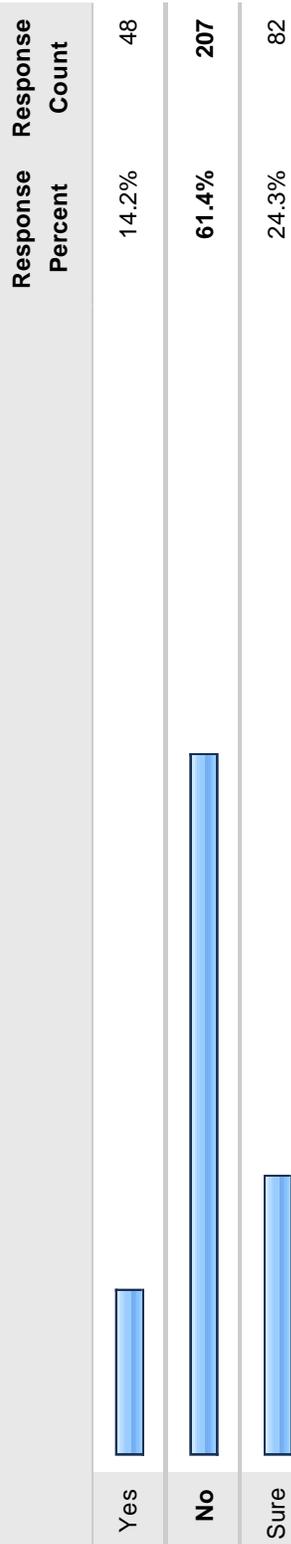
answered question	337
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8. Which of the following methods do you think are most effective for providing hazard and disaster information? (Check all that apply)



Church (faith-based institutions)		36.8%	124
CERT Classes		31.8%	107
Public Awareness Campaign (e.g., Flood Awareness Week, Winter Storm Preparedness Month)		45.7%	154
Books		8.0%	27
Chamber of Commerce		6.2%	21
Academic Institutions		11.0%	37
Public Library		26.1%	88
Red Cross Information		30.3%	102
Community Safety Events		37.4%	126
Fair Booths		26.7%	90
Word of Mouth		33.2%	112
Other (please specify)		3.9%	13
		answered question	337
		skipped question	44

9. Is your property located in or near a FEMA designated floodplain?



answered question 337
skipped question 44

10. Do you have flood insurance?



answered question 337
skipped question 44

11. Do you have earthquake insurance?

	Response Percent	Response Count
Yes	13.6%	46
No	86.4%	291
answered question		337
skipped question		44

12. Is your property located in an area at risk for wild fires?

	Response Percent	Response Count
Yes	14.8%	50
No	73.3%	247
Not Sure	11.9%	40
answered question		337
skipped question		44

13. Have you ever had problems getting homeowners or renters insurance due to risks from natural hazards?

	Response Percent	Response Count
Yes	2.1%	7
No	97.9%	329

If "yes," what natural hazard was the cause of the problem?

5

answered question	336
skipped question	45

14. When you moved into your home, did you consider the impact a natural disaster could have on your home?

	Response Percent	Response Count
Yes	42.8%	142
No	57.2%	190

answered question	332
skipped question	49

15. Was the presence of a natural hazard risk zone (e.g., dam failure zone, flood zone, landslide hazard area, high fire risk area) disclosed to you by a real estate agent, seller, or landlord before you purchased or moved into your home?

	Response Percent	Response Count
Yes	12.7%	42
No	53.6%	178
Not applicable	33.7%	112
answered question		332
skipped question		49

16. Would the disclosure of this type of natural hazard risk information influence your decision to buy or rent a home?

	Response Percent	Response Count
Yes	83.7%	278
No	16.3%	54
answered question		332
skipped question		49

17. How much money would you be willing to spend to retrofit your home to reduce risks associated with natural disasters? (for example, by elevating a home above the flood level, performing seismic upgrades, or replacing a combustible roof with non-combustible roofing)

	Response Percent	Response Count
\$10,000 or above	7.8%	26
\$5,000 to \$9,999	11.7%	39
\$1,000 to \$4,999	19.0%	63
Less than \$1,000	13.6%	45
Nothing	12.3%	41
Don't Know	35.5%	118
answered question		332
skipped question		49

18. Which of the following incentives would encourage you to spend money to retrofit your home to protect against natural disasters? (Check all that apply)

	Response Percent	Response Count
Building permit fee waiver	42.5%	141
Insurance premium discount	71.1%	236
Mortgage discount	52.7%	175
Property tax break or incentive	77.4%	257
Low interest rate loan	48.8%	162
Grant funding	67.8%	225
None	8.4%	28
Other (please specify)	2.4%	8
answered question		332
skipped question		49

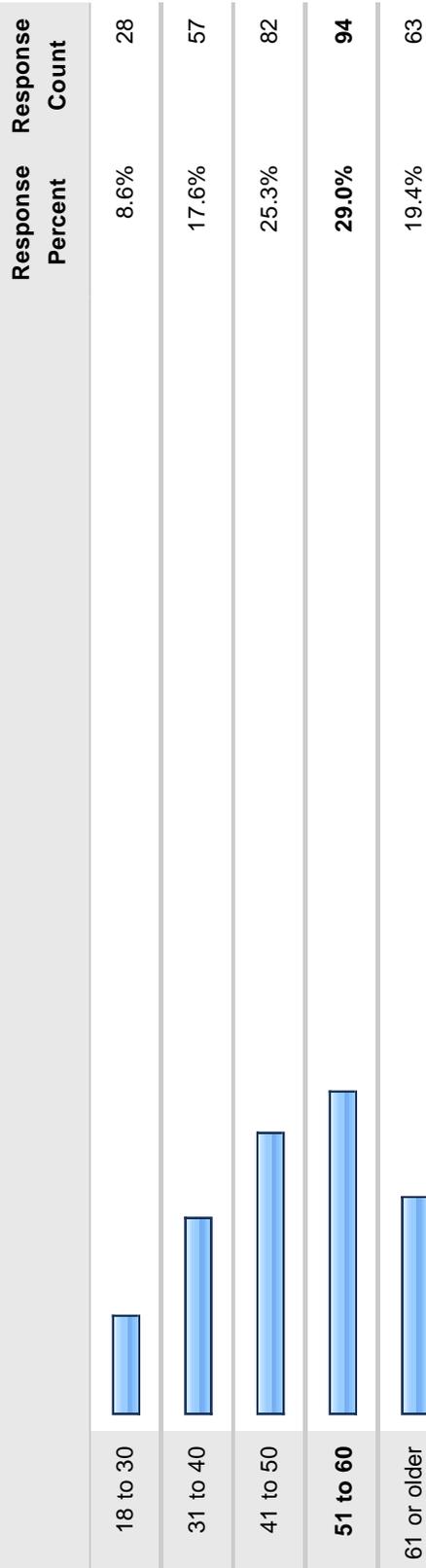
19. If your property were located in a designated “high hazard” area or had received repetitive damages from a natural hazard event, would you consider a “buyout” offered by a public agency?

	Response Percent	Response Count
Yes	84.6%	275
No	15.4%	50
answered question		325
skipped question		56

20. Please indicate how you feel about the following statement: It is the responsibility of government (local, state and federal) to provide education and programs that promote citizen actions that will reduce exposure to the risks associated with natural hazards.

	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Rating Average	Response Count
Choose one:	5.7% (19)	14.2% (47)	12.4% (41)	43.8% (145)	23.9% (79)	3.66	331
answered question							331
skipped question							50

21. Please indicate your age range:



answered question 324

skipped question 57

22. Please indicate the primary language spoken in your household.

	Response Percent	Response Count
English	99.1%	321
Spanish	0.0%	0
Other Indo-European Language	0.0%	0
Asian and Pacific Island Languages	0.3%	1
Other (please specify)	0.6%	2
	answered question	324
	skipped question	57

23. Please indicate your gender:

	Response Percent	Response Count
Male	52.5%	168
Female	47.5%	152
	answered question	320
	skipped question	61

24. Please indicate your highest level of education.

	Response Percent	Response Count
Grade school/No schooling	0.0%	0
Some high school	0.3%	1
High school graduate/GED	5.2%	17
Some college/Trade school	29.5%	96
College degree	44.6%	145
Post-graduate degree	19.7%	64
Other (please specify)	0.6%	2
answered question		325
skipped question		56

25. How long have you lived in Ada County?

	Response Percent	Response Count
Less than 1 year	0.9%	3
1 to 5 years	13.1%	42
6 to 10 years	14.6%	47
11 to 20 years	27.4%	88
More than 20 years	43.9%	141

answered question 321

skipped question 60

26. Do you own or rent your place of residence?

	Response Percent	Response Count
Own	87.3%	283
Rent	12.7%	41

answered question 324

skipped question 57

27. How much is your gross household income?

	Response Percent	Response Count
\$20,000 or less	4.6%	14
\$20,001 to \$49,999	26.2%	79
\$50,000 to \$74,999	26.2%	79
\$75,000 to \$99,999	23.2%	70
\$100,000 or More	19.9%	60
answered question		302
skipped question		79

28. Do you have regular access to the Internet?

	Response Percent	Response Count
Yes	97.8%	316
No	2.2%	7
answered question		323
skipped question		58

29. Comments

Response Count

76

answered question	76
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skipped question	305
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Ada County
Hazard Mitigation Plan Update

APPENDIX C.
EXAMPLE PROGRESS REPORT

June

APPENDIX C. EXAMPLE PROGRESS REPORT

Ada County Hazard Mitigation Plan Annual Progress Report

Reporting Period: *(Insert reporting period)*

Background: Ada County and participating cities and special purpose districts in the county developed a hazard mitigation plan to reduce risk from all hazards by identifying resources, information and strategies for risk reduction. The federal Disaster Mitigation Act of 2000 requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. To prepare the plan, the participating partners organized resources, assessed risks from natural hazards within the county, developed planning goals and objectives, reviewed mitigation alternatives, and developed an action plan to address probable impacts from natural hazards. By completing this process, these jurisdictions maintained compliance with the Disaster Mitigation Act, achieving eligibility for mitigation grant funding opportunities afforded under the Robert T. Stafford Act. The plan can be viewed on-line at:

INSERT LINK

Summary Overview of the Plan's Progress: The performance period for the Hazard Mitigation Plan became effective on **____, 2011**, with the final approval of the plan by FEMA. The initial performance period for this plan will be 5 years, with an anticipated update to the plan to occur before **____, 2016**. As of this reporting period, the performance period for this plan is considered to be **__%** complete. The Hazard Mitigation Plan has targeted **__ hazard mitigation initiatives** to be pursued during the 5-year performance period. As of the reporting period, the following overall progress can be reported:

- **__** out of **__** initiatives (**__%**) reported ongoing action toward completion.
- **__** out of **__** initiatives (**__%**) were reported as being complete.
- **__** out of **__** initiatives (**__%**) reported no action taken.

Purpose: The purpose of this report is to provide an annual update on the implementation of the action plan identified in the Ada County Hazard Mitigation Plan. The objective is to ensure that there is a continuing and responsive planning process that will keep the Hazard Mitigation Plan dynamic and responsive to the needs and capabilities of the partner jurisdictions. This report discusses the following:

- Natural hazard events that have occurred within the last year
- Changes in risk exposure within the planning area (all of Ada County)
- Mitigation success stories
- Review of the action plan
- Changes in capabilities that could impact plan implementation
- Recommendations for changes/enhancement.

Review of the Action Plan: Table 2 reviews the action plan, reporting the status of each initiative. Reviewers of this report should refer to the Hazard Mitigation Plan for more detailed descriptions of each initiative and the prioritization process.

Address the following in the “status” column of the following table:

- Was any element of the initiative carried out during the reporting period?
- If no action was completed, why?
- Is the timeline for implementation for the initiative still appropriate?
- If the initiative was completed, does it need to be changed or removed from the action plan?

TABLE 2. ACTION PLAN MATRIX				
Action Taken? (Yes or No)	Time Line	Priority	Status	Status (X, O,✓)
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	
Initiative # ___	—		[description]	

Changes That May Impact Implementation of the Plan: *(Insert brief overview of any significant changes in the planning area that would have a profound impact on the implementation of the plan. Specify any changes in technical, regulatory and financial capabilities identified during the plan's development)*

Recommendations for Changes or Enhancements: Based on the review of this report by the Hazard Mitigation Plan Steering Committee, the following recommendations will be noted for future updates or revisions to the plan:

- _____
- _____
- _____
- _____
- _____
- _____

Public review notice: *The contents of this report are considered to be public knowledge and have been prepared for total public disclosure. Copies of the report have been provided to the governing boards of all planning partners and to local media outlets and the report is posted on the Ada County Hazard Mitigation Plan website. Any questions or comments regarding the contents of this report should be directed to:*

Insert Contact Info Here

Ada County
Hazard Mitigation Plan Update

APPENDIX D.
PLAN ADOPTION RESOLUTIONS FROM PLANNING PARTNERS

July 2011

**APPENDIX D.
PLAN ADOPTION RESOLUTIONS FROM PLANNING
PARTNERS**

To Be Provided With Final Release

Ada County
Hazard Mitigation Plan Update

APPENDIX E.
PRIOR PLAN MITIGATION STRATEGIES

July 2011

Chapter 5: Treatment Recommendations

5 Administration & Implementation Strategy

Critical to the implementation of this Wildfire Mitigation Plan, as a component of the All Hazard Mitigation Plan, will be the identification of, and implementation of, an integrated schedule of treatments targeted at achieving an elimination of the lives lost, and reduction in structures destroyed, infrastructure compromised, and unique ecosystems damaged that serve to sustain the way-of-life and economy of Ada County and the region. Since there are many management agencies and thousands of private landowners in Ada County, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across all ownerships.

Ada County encourages the philosophy of instilling disaster resistance in normal day-to-day operations. By implementing plan activities through existing programs and resources, the cost of mitigation is often a small portion of the overall cost of a project's design or program.

The federal land management agencies in Ada County, specifically the Bureau of Land Management, are participants in this planning process and have contributed to its development. Where available, their schedule of land treatments have been considered in this planning process to better facilitate a correlation between their identified planning efforts and the efforts of Ada County.

All risk assessments were made based on the conditions existing during 2005-06, thus, the recommendations in this section have been made in light of those conditions. However, the components of risk and the preparedness of the county's resources are not static. It will be necessary to fine-tune this plan's recommendations annually to adjust for changes in the components of risk, population density changes, infrastructure modifications, and other factors.

As part of the Policy of Ada County in relation to this planning document, the entire **All Hazard Mitigation Plan** should be reviewed annually at a special meeting of the Ada County Commissioners, open to the public and involving all municipalities/jurisdictions, where action items, priorities, budgets, and modifications can be made or confirmed. A written review of the plan should be prepared (or arranged) by the Chairman of the County Commissioners, detailing plans for the year's activities, and made available to the general public ahead of the meeting (in accord with the Idaho Open Public Meeting Laws). Amendments to the plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the All Hazards Mitigation Plan. Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

5.1 Prioritization of Mitigation Activities

The prioritization process will include a special emphasis on cost-benefit analysis review. The process will reflect that a key component in funding decision is a determination that the project will provide an equivalent or more in benefits over the life of the project when compared with the costs. Projects will be administered by local jurisdictions with overall coordination provided by the Ada County Emergency Management Director.

County Commissioners and the elected officials of all jurisdictions will evaluate opportunities and establish their own unique priorities to accomplish mitigation activities where existing funds and resources are available and there is community interest in implementing mitigation measures. If no federal funding is used in these situations, the prioritization process may be less

formal. Often the types of projects that the County can afford to do on their own are in relation to improved codes and standards, department planning and preparedness, and education. These types of projects may not meet the traditional project model, selection criteria, and benefit-cost model. The County will consider all pre-disaster mitigation proposals brought before the County Commissioners by department heads, city officials, fire districts and local civic groups. The Ada County Wildfire Steering Committee will take the lead in collecting information on proposed projects and amendments to the plan. This will be done in collaboration with interested parties on an annual basis. This information will be provided to the County Commissioners through the Ada City-County Emergency Management.

When federal or state funding is available for hazard mitigation, there are usually requirements that establish a rigorous benefit-cost analysis as a guiding criterion in establishing project priorities. The county will understand the basic federal grant program criteria which will drive the identification, selection, and funding of the most competitive and worthy mitigation projects. FEMA's three grant programs (the post-disaster Hazard Mitigation Grant Program, the pre-disaster Flood Mitigation Assistance and Pre-Disaster Mitigation grant programs) that offer federal mitigation funding to state and local governments all include the benefit-cost and repetitive loss selection criteria.

The prioritization of projects will occur annually and be facilitated by the County Emergency Management Director to include the County Commissioner's Office, City Mayors and Councils, Fire District Chiefs and Commissioners, agency representatives (BLM, Idaho Department of Lands, etc.). The prioritization of projects will be based on the selection of projects which create a balanced approach to pre-disaster mitigation which recognizes the hierarchy of treating in order (highest first):

- People and Structures
- Infrastructure
- Local and Regional Economy
- Traditional Way of Life
- Ecosystems

5.1.1 Prioritization Scheme

A numerical scoring system is used to prioritize projects. This prioritization serves as a guide for the county when developing mitigation activities. This project prioritization scheme has been designed to rank projects on a case by case basis. In many cases, a very good project in a lower priority category could outrank a mediocre project in a higher priority. The county mitigation program does not want to restrict funding to only those projects that meet the high priorities because what may be a high priority for a specific community may not be a high priority at the county level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying reasons and criteria is a necessity for a functional mitigation program at the County and community level.

To implement this case by case concept, a more detailed process for evaluating and prioritizing projects has been developed. Any type of project, whether county or site specific, will be prioritized in this more formal manner.

To prioritize projects, a general scoring system has been developed. This prioritization scheme has been used in statewide all hazard mitigations plans. These factors range from cost-benefit ratios, to details on the hazard being mitigated, to environmental impacts.

Since planning projects are somewhat different than non-planning projects when it comes to reviewing them, different criteria will be considered, depending on the type of project.

The factors for the non-planning projects include:

- Cost/Benefit
- Population Benefit
- Property Benefit
- Economic Benefit
- Project Feasibility (environmentally, politically, socially)
- Hazard Magnitude/Frequency
- Potential for repetitive loss reduction
- Potential to mitigate hazards to future development
- Potential project effectiveness and sustainability

The factors for the planning projects include:

- Cost/Benefit
- Vulnerability of the community or communities
- Potential for repetitive loss reduction
- Potential to mitigate hazards to future development

Since some factors are considered more critical than others, two ranking scales have been developed. A scale of 1-10, 10 being the best, has been used for cost, population benefit, property benefit, economic benefit, and vulnerability of the community. Project feasibility, hazard magnitude/frequency, potential for repetitive loss reduction, potential to mitigate hazards to future development, and potential project effectiveness and sustainability are all rated on a 1-5 scale, with 5 being the best. The highest possible score for a non-planning project is 65 and for a planning project is 30.

The guidelines for each category are as follows:

5.1.1.1 Benefit / Cost

The analysis process will include summaries as appropriate for each project, but will include benefit / cost analysis results. Projects with a negative benefit / cost analysis result will be ranked as a 0. Projects with a positive Benefit / Cost analysis will receive a score equal to the projects Benefit / Cost Analysis results divided by 10. Therefore a project with a BC ratio of 50:1 would receive 5 points, a project with a BC ratio of 100:1 (or higher) would receive the maximum points of 10.

5.1.1.2 Population Benefit

Population Benefit relates to the ability of the project to prevent the loss of life or injuries. A ranking of 10 has the potential to impact over 3,000 people. A ranking of 5 has the potential to impact 100 people, and a ranking of 1 will not impact the population. In some cases, a project may not directly provide population benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects the population, but should not be considered to have no population benefit.

5.1.1.3 Property Benefit

Property Benefit relates to the prevention of physical losses to structures, infrastructure, and personal property. These losses can be attributed to potential dollar losses. Similar to cost, a ranking of 10 has the potential to save over \$1,000,000 in losses, a ranking of 5 has the potential to save roughly \$100,000 in losses, and a ranking of 1 only has the potential to save less than \$100 in losses. In some cases, a project may not directly provide property benefits,

but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects property, but should not be considered to have no property benefit.

5.1.1.4 Economic Benefit

Economic Benefit is related to the savings from mitigation to the economy. This benefit includes reduction of losses in revenues, jobs, and facility shut downs. Since this benefit can be difficult to evaluate, a ranking of 10 would prevent a total economic collapse, a ranking of 5 could prevent losses to about half the economy, and a ranking of 1 would not prevent any economic losses. In some cases, a project may not directly provide economic benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly affects the economy, but should not be considered to have no economic benefit.

5.1.1.5 Vulnerability of the Community

For planning projects, the vulnerability of the community is considered. A community that has a high vulnerability with respect to other jurisdictions to the hazard or hazards being studied or planned for will receive a higher score. To promote planning participation by the smaller or less vulnerable communities in the state, the score will be based on the other communities being considered for planning grants. A community that is the most vulnerable will receive a score of 10, and one that is the least, a score of 1.

5.1.1.6 Project Feasibility (Environmentally, Politically & Socially)

Project Feasibility relates to the likelihood that such a project could be completed. Projects with low feasibility would include projects with significant environmental concerns or public opposition. A project with high feasibility has public and political support without environmental concerns. Those projects with very high feasibility would receive a ranking of 5 and those with very low would receive a ranking of 1.

5.1.1.7 Hazard Magnitude/Frequency

The Hazard Magnitude/Frequency rating is a combination of the recurrence period and magnitude of a hazard. The severity of the hazard being mitigated and the frequency of that event must both be considered. For example, a project mitigating a 10-year event that causes significant damage would receive a higher rating than one that mitigates a 500-year event that causes minimal damage. For a ranking of 5, the project mitigates a high frequency, high magnitude event. A 1 ranking is for a low frequency, low magnitude event. Note that only the damages being mitigated should be considered here, not the entire losses from that event.

5.1.1.8 Potential for repetitive loss reduction

Those projects that mitigate repetitive losses receive priority consideration here. Common sense dictates that losses that occur frequently will continue to do so until the hazard is mitigated. Projects that will reduce losses that have occurred more than three times receive a rating of 5. Those that do not address repetitive losses receive a rating of 1.

5.1.1.9 Potential to mitigate hazards to future development

Proposed actions that can have a direct impact on the vulnerability of future development are given additional consideration. If hazards can be mitigated on the onset of the development, the county will be less vulnerable in the future. Projects that will have a significant effect on all future development receive a rating of 5. Those that do not affect development should receive a rating of 1.

5.1.1.10 Potential project effectiveness and sustainability

Two important aspects of all projects are effectiveness and sustainability. For a project to be worthwhile, it needs to be effective and actually mitigate the hazard. A project that is questionable in its effectiveness will score lower in this category. Sustainability is the ability for the project to be maintained. Can the project sustain itself after grant funding is spent? Is maintenance required? If so, are or will the resources be in place to maintain the project. An action that is highly effective and sustainable will receive a ranking of 5. A project with effectiveness that is highly questionable and not easily sustained should receive a ranking of 1.

5.1.1.11 Final ranking

Upon ranking a project in each of these categories, a total score can be derived by adding together each of the scores. The project can then be ranking high, medium, or low based on the non-planning project thresholds of:

Project Ranking Priority Score

- High 40-65
- Medium 25-39
- Low 9-25

5.2 Possible Fire Mitigation Activities

As part of the implementation of fire mitigation activities in Ada County, a variety of management tools may be used. Management tools include but are not limited to the following:

- Homeowner and landowner education
- Building code amendments and enforcement of existing codes for structures and infrastructure in the WUI
- Home site defensible zone through fuels modification
- Community defensible zone fuels alteration
- Access improvements
- Access creation
- Emergency response enhancements (training, equipment, locating new fire stations, new fire districts)
- Regional land management recommendations for private, state, and federal landowners

Maintaining private property rights will continue to be one of the guiding principles of this plan's implementation. Sound risk management is a foundation for all fire management activities. Net gains to the public benefit will be an important component of decisions.

5.3 WUI Safety & Policy Actions

Wildfire mitigation efforts must be supported by county policies and regulations that maintain a solid foundation for safety and consistency. Wildland-urban interface Safety and Policy recommendations are policy related in nature. Because these items are regulatory, they will not necessarily be accompanied by cost estimates. It is likely that debate and formulation of alternatives will serve to make these recommendations suitable and appropriate for Ada County.

Prioritization of activities recommended in this plan should be made by the Ada County Commissioners. During the annual review of this plan, reprioritization can be justified in response to changing conditions and funding opportunities.

5.3.1 Existing Practices That Should Continue

Ada County currently is implementing many projects and activities that, in their absence, could lead to increased wildland fire loss potential. By enumerating some of them here, it is the desire of the authors to point out successful activities.

- The dedication of fire district volunteers and professionals has contributes tremendously to the safety and well-being of residents of Ada County. All individuals involved in fire suppression in Ada County should be commended and recognized for the sacrifices they make in order to provide the excellent level of community protection afforded to county residents.
- The aggressive Fire Prevention campaign by local fire departments, the Boise National Forest and the Boise District of the BLM has contributed to a reduction in the number of human caused fires over time in Ada County. The prevention program should receive necessary support over the long term.
- The BLM Rural Fire Assistance has made significant contributions to the capabilities of the local fire districts throughout Ada County.
- Existing rural addressing efforts have aided emergency responses well. However, with the rapidly expanding population, rural addressing revisions will be an on-going process.
- The development and implementation of the county's wildland-urban fire interface overlay district and the vegetation management requirements within the district is a model for counties nation wide. Future enforcement of these requirements will be necessary for the benefits of this plan to be realized.
- Development of the valley-wide mutual aid agreement and the Ada County Wildfire Response Plan help to facilitate response procedure during mutual aid responses throughout Ada County.

5.3.2 Proposed Activities

Table 5.1. WUI Action Items in Safety and Policy.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.1.a: Enforce existing building codes and vegetation management requirements as detailed in the Ada County Uniform Building Code.</p>	<p>Protection of people and structures by enforcement of existing standards to insure new homes can be protected while minimizing risks to firefighters.</p>	<p>County Commissioners in cooperation with Planning and Zoning, Building Department, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.</p>	<ul style="list-style-type: none"> Devise strategy between involved parties as to how to efficiently and effectively enforce building codes.
<p>5.1.b: Adopt and enforce applicable components of NFPA Code 1144 that address the unique needs of Ada County. Ensure policy addresses the specific needs of fire suppression resources, building materials and applies to subdivisions as well as new single home construction.</p>	<p>Protection of people and structures by applying a standard of road widths, access, water supply, and building regulations suitable to insure new homes can be protected while minimizing risks to firefighters.</p>	<p>County Commissioners in cooperation with Planning and Zoning, Building Department, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.</p>	<ul style="list-style-type: none"> 2006 Debate and adopt revised code. Adopt recommended codes. Ensure enforcement of codes by building department. Integrate into County Comprehensive Plan
<p>5.1.c: Amend existing building codes to apply equally to new single housing construction as it does to subdivisions. Make sure existing policy is comprehensive to wildland fire risks.</p>	<p>Protection of people and structures by applying a standard of road widths, access, and building regulations suitable to insure new homes can be protected while minimizing risks to firefighters. (defensible space, roads and access management, water systems, building codes, signage, and maintenance of private forest and range lands)</p>	<p>County Commissioners in cooperation with Planning and Zoning, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District, and the Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star.</p>	<ul style="list-style-type: none"> 2006 Debate and adopt revised code. Review adequacy of changes annually, make changes as needed.
<p>5.1.d: Enact and enforce fireworks ban on public lands along Boise Front.</p>	<p>Protection of people, structures and unique ecosystems by reducing the probability of fire occurrence through the use of fireworks</p>	<p>County Commissioners, Sheriff's Office, Boise Parks and Recreation, and BLM</p>	<p>2006 Pass ordinance and post necessary signs.</p>

5.4 Home and Business Protection Measures

Many of the recommendations in this category involve education and increasing awareness of the residents of Ada County. Continuing public education is essential to increase the awareness of the factors that contribute to the wildland fire hazard in Ada County. Although prevention campaigns and public education efforts have been quite successful in many areas, there is still much that residents can do to protect themselves and their property from wildland fire.

The recommendations stem from a variety of factors including items that became obvious during the analysis of the public surveys, discussions during public meetings, and observations about choices made by residents living in the Wildland-Urban Interface. Over and over, a common theme was present that pointed to a situation of landowners not recognizing risk factors:

- Fire District personnel pointed to numerous examples of inadequate access to homes of people who believe they have adequate ingress.
- Discussions with the general public indicated an awareness of wildland fire risk, but they could not specifically identify risk factors.
- Over half of the respondents to the public mail survey indicated (42%) they want to participate in educational opportunities focused on the WUI and what they can do to increase their home's chances of surviving a wildfire.

In addition to those items enumerated in Table 5.1, residents and policy makers of Ada County should recognize certain factors that exist today, that in their absence would lead to an increase in the risk factors associated with wildland fires in the WUI of Ada County. These items listed below should be encouraged, acknowledged, and recognized for their contributions to the reduction of wildland fire risks:

- **Livestock Grazing** in and around the communities of Ada County has led to a reduction of many of the fine fuels that would have been found in and around the communities and in the wildlands of Ada County. Domestic livestock not only eat these grasses, forbs, and shrubs, but also trample certain fuels to the ground where decomposition rates may increase. Responsible livestock grazing in this region should be encouraged into the future as a low cost, positive tool of wildfire mitigation in the Wildland-Urban Interface and in the wildlands.
- **Agriculture** is a significant component of Ada County's economy. Much of the northern region of the county is occupied with the production of agricultural crops. The original conversion of these lands to agriculture from rangeland, was targeted at the most productive soils and juxtaposition to infrastructure. Many of these productive ecosystems were consequently also at some of the highest risk to wildland fires because biomass accumulations increased in these productive landscapes. The result today, is that much of the rangeland historically prone to frequent fires, has been converted to agriculture, which is at a much lower risk than prior to its conversion. The preservation of a viable agricultural economy in Ada County is integral to the continued management of wildfire risk in the county.

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<p>5.2.a: Continue Wildfire Steering committee comprised of representatives from all fire and emergency service entities to coordinate and develop strategies to advance fire mitigation activities countywide.</p>	<p>Protection of people and structures, infrastructure, public and firefighter safety and ecosystems by coordinating efforts and improving communication avenues between all parties to make informed decisions about wildfire issues.</p>	<p>County Commissioners, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, Southwest Idaho RC&D, Emergency Management, BLM, Forest Service, Idaho Fish Wildlife, and Ada County dispatch, Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star.</p>	<p>Continue to fund and support the efforts of the current Wildfire Steering Committee program.</p>
<p>5.2.b: Continued public education campaigns through targeted media distribution, brochure and leaflet door visits, Firewise presentations to homeowners and other interest groups, educational programs at the Foothills Learning Center, and any other means by which to communicate the need for fire safety throughout Ada County.</p>	<p>Protect people and structures by increasing awareness of WUI risks, how to recognize risk factors, and how to modify those factors to reduce risk</p>	<p>Cooperative effort including: Boise District BLM, Treasure Valley Fire Prevention Cooperative, Idaho Department of Lands, Boise National Forest, City of Boise, City of Garden City, City of Eagle, City of Meridian, City of Star, and City of Kuna, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and local school districts.</p>	<p>2006 Work together to form a countywide public education working group to strategize on methods and tactics to maximize outreach effectiveness. Determine needs for educational material and advertising budgets. Ongoing: Identify and coordinate mitigation opportunities and work as a single cohesive unit to see projects through.</p>

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<p>5.2.c: Wildfire risk assessments of homes in identified communities</p>	<p>Protect people and structures by increasing awareness of specific risk factors of individual home sites in the at-risk landscapes. Only after these are completed can home site treatments follow.</p>	<p>County Commissioners Office in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and local homeowners. Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.</p>	<p>Cost: Approximately \$100 per home site for inspection, written report, and discussions with the homeowners. There are approximately 300,904 housing units in Ada County, roughly 6,018 (2%) of these structures would benefit from a home site inspection and budget determination for a total cost estimate of \$601,800.</p> <p>Action Item: Secure funding and contract to complete the inspections during years 1 & 2 (2006-07).</p> <p>Home site inspection reports and estimated budget for each home site's treatments will be a requirement to receive funding for treatments through grants.</p>
<p>5.2.d: Home site WUI Treatments</p>	<p>Protect people, structures, and increase firefighter safety by reducing the risk factors surrounding homes in the WUI of Ada County</p>	<p>County Commissioners Office in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and local homeowners. Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.</p>	<p>Actual funding level will be based on the outcomes of the home site assessments and cost estimates</p> <p>Estimate that treatments will cost approximately \$850 per home site for a defensible space of roughly 150'. There are approximately 6,018 homes in this category for an estimated cost of \$5,115,300.</p> <p>Home site treatments can begin after the securing of funding for the treatments and immediate implementation in 2006 and will continue from year 1 through 5 (2011).</p>

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<p>5.2.e: Community Defensible Zone WUI Treatments</p>	<p>Protect people, structures, and increase firefighter safety by reducing the risk factors surrounding high risk communities in the WUI of Ada County</p>	<p>County Commissioners Office in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and local homeowners. Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.</p>	<p>Actual funding level will be based on the outcomes of the home site assessments and cost estimates.</p> <p>Years 2-5 (2007-11) Treat high risk wildland fuels from home site defensible space treatments (5.4.c) to an area extending 400 feet to 750 feet beyond home defensible spaces, where steep slopes and high accumulations of risky fuels exist. Should link together home treatment areas. Treatments target high risk concentrations of fuels and not 100% of the area identified. To be completed only after or during the creation of home defensible spaces have been implemented.</p> <p>Approximate average cost on a per structure basis is \$650-\$800 depending on extent of home defensibility site treatments, for a cost estimate of \$ 4,363,050</p>
<p>5.2.f: Maintenance of Home site WUI Treatments</p>	<p>Protect people, structures, and increase firefighter safety by reducing the risk factors surrounding homes in the WUI of Ada County</p>	<p>County Commissioners Office in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and local homeowners. Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.</p>	<p>Home site defensibility treatments must be maintained periodically to sustain benefits of the initial treatments.</p> <p>Each site should be assessed 5 years following initial treatment</p> <p>Estimated re-inspection cost will be \$50 per home site on all sites initially treated or recommended for future inspections (\$300,900)</p> <p>Follow-up inspection reports with treatments as recommended years 5 through 10.</p>

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<p>5.2.g: Re-entry of Home site WUI Treatments</p>	<p>Protect people, structures, and increase firefighter safety by reducing the risk factors surrounding homes in the WUI of Ada County</p>	<p>County Commissioners Office in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and local homeowners. Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.</p>	<p>Re-entry treatments will be needed periodically to maintain the benefits of the initial WUI home treatments. Each re-entry schedule should be based on the initial inspection report recommendations, observations, and changes in local conditions. Generally occurs every 5-10 years.</p>
<p>5.2.h: Initiate fuels reduction project along Boise Greenbelt to reduce the potential for fire development along recreation corridor</p>	<p>Protect people, structures and recreation values by reducing the probability of fires within the Boise Greenbelt.</p>	<p>City of Boise Parks and Recreation in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.</p>	<p>2006 Determine project areas and develop treatment schedule.</p>
<p>5.2.i: Evacuation Planning and Education to inform public of evacuation routes and evacuation procedure.</p>	<p>Protection of people and structures by providing residents and visitors with the information they need for an orderly and safe evacuation.</p>	<p>County Commissioners in cooperation with Ada County Highway District, law enforcement, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.</p>	<p>2006 Start immediately using existing educational program materials and staffing. Costs initially to be funded through existing budgets for these activities to be followed with grant monies to continue the programs as identified in the formal needs assessment.</p>
<p>5.2.j: Hire or appoint Technical Assistance Coordinator/Special Project Leader to aid in grant writing, coordination of training and equipment needs, and administration of funds countywide.</p>	<p>Protection of people and structures by coordinating county needs and by facilitating writing of district and county grants for fire and other special projects.</p>	<p>Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District in cooperation with Emergency Services and County Commissioners.</p>	<p>2006 Seek funding for position. Post job listing for potential candidates.</p>
<p>5.2.k: Expansion of the Treasure Valley Fire Prevention Cooperative to enhance large scale prevention efforts in the Treasure Valley metropolitan area, to include Canyon County.</p>	<p>Protection of people, structures, and ecosystems by increasing awareness of the consequences of unwanted human-caused wildland fire and providing information on how to avoid unwanted human-caused fires.</p>	<p>Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, Bureau of Land Management, Fish and Wildlife Service, Forest Service, Idaho Department of Lands and any other interested stakeholders.</p>	<p>2006 Develop bylaws and invite new members. Ongoing: Continue current events, explore possible new events, and seek grant funding to pursue events, educational initiatives, and media campaigns.</p>

5.5 Infrastructure Hardening

Significant infrastructure refers to the communications, transportation (road and rail networks), energy transport supply systems (gas and power lines), and water supply that service the county. Protection of these elements is critical in protecting the health, safety and economy of Ada County.

Infrastructure hardening is a term used here to signify the process of making critical infrastructure components more resistant to likely hazards to be faced based on their location, characteristics, and exposure.

Communication Infrastructure: Generally, there is little that needs to be done to safeguard communication infrastructure within Ada County from wildland fire. The large communication site on Table Rock is relatively safe from damage by wildland fire. However, there are some improvements that could be made in order to better serve emergency communications needs during mutual aid responses.

Transportation Infrastructure (road and rail networks): Wildland fire poses little direct threat to roadways. However, ignitions along highways and roadways contribute significantly to fire load across the county and should be address as part of the implementation of this plan. Various alternatives from herbicides to intensive livestock grazing coupled with mechanical treatments have been suggested. A variety of approaches will be appropriate depending on the landowner, fuels present, and other factors.

Many roads in the county have limiting characteristics, such as steep grades, narrow travel surfaces, sharp turning radii, low load limit bridges and cattle guards, and heavy accumulations of fuels adjacent to some roads. This is particularly true in the Boise Foothills. Roads that have these characteristics and access homes and businesses are the priority for improvements in the county. Furthermore, alternate access routes into populated areas are absent. Access improvements should be made where possible.

There are a number of active railways that pass through Ada County. The routes generally traverse relatively level rangelands with few curves, grades, or sidings; however, the potential for an ignition due to sparks, hot stack carbon, or blown brake shoes emitted by a train is significant. Care should be taken to keep the railroad corridor clear of wildland fuels by mowing, grazing, harvesting, or other means.

Energy Transport Supply Systems (gas and power lines): A number of power and gas lines pass through Ada County. Many of these pass through undeveloped, rangeland areas that are subject to wildland fire events. The potential for wildland fire causing catastrophic damage due to pipeline explosions is very real. All possible steps should be taken to secure this infrastructure. In cases where non-flammable steel support structures are used for power transmission lines, there is little direct threat of power supply damage. However, where wooden power poles have been used, there is some risk of failure. Since retrofitting of these infrastructure components is not practical, no such recommendations will be made. It is the recommendation of this Wildfire Mitigation Plan that this situation be evaluated annually and monitored.

Water Supply: In some areas of Ada County, irrigation water is derived from surface flows that feed larger irrigation network that sustain the county's agricultural economy. High intensity wildfires threaten quality of these surface water sources by removing the organic material and vegetation that keeps sediments from entering streams. Protection of watersheds is important in maintaining high quality surface water for Ada County.

Emergency water supply is limiting in many areas. Many areas of Ada County are not serviced by any type of emergency water supply. Where this condition exists, municipalities should consider extending the hydrant system, or requiring the installation of dry hydrants to provide emergency water supply.

5.5.1 Proposed Activities

Table 5.3. Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.3.a: Identify and post FEMA “Emergency Evacuation Route” signs along the identified Primary and secondary access routes in the county.	Protection of people and structures by informing residents and visitors of significant infrastructure in the county that will be maintained in the case of an emergency.	County Commissioners in cooperation with Ada County Highway Districts, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.	2006 Purchase of signs. Post roads and make information available to residents of the importance of Emergency Routes.
5.3.b: Fuels mitigation of the FEMA “Emergency Evacuation Routes” in the county to insure these routes can be maintained in the case of an emergency.	Protection of people and structures by providing residents and visitors with ingress and egress that can be maintained during an emergency.	County Commissioners in cooperation with Ada County Highway Districts, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.	2006 Full assessment of road defensibility and ownership participation. Implementation of projects
5.3.c: Improve road access to homes through construction of off-road access points and loop roads in subdivisions and other populated areas.	Protection of people, structures, infrastructure, and economy by improving access for residents and fire fighting personnel in the event of a wildfire.	County Commissioners in cooperation with Ada County Highway Districts, Planning and Zoning, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District.	2006 Determine subdivisions and areas in greatest need of access improvements countywide and prioritize access improvement projects.
5.3.d: Update and improve road signing and rural addressing compliant with NFPA standards for visibility throughout Ada County.	Protection of people and structures by reducing emergency response time.	County Commissioners in cooperation with Planning and Zoning and local landowners.	2006 Update rural addressing and assure that 911 Dispatch, the Boise Interagency Logistics Center, rural fire departments, sheriff, and all emergency services are aware of new addresses. Ongoing: New subdivisions should be signed with names as well as county grid addresses to assure consistency in addressing throughout the county.

Table 5.3. Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.3.e: Roadside vegetation treatments to reduce flammability of fuels immediately adjacent to roads at high risk of ignitions.</p>	<p>Protection of people and structures and unique ecosystems by reducing probability of ignitions along travel corridors.</p>	<p>Ada County Highway Districts, Idaho Fish and Game, BLM, Forest Service, and other affected agencies.</p>	<p>Treatments may include mowing, spring application herbicide treatments or other treatments to reduce flammability. Treatment along Boise Front and along I-84 may be set as priority treatment areas. This item is applicable to the I-84 corridor as well as all county and state roads not specifically identified by fire districts.</p>
<p>5.3.f: Identification of resource staging areas throughout the county for coordination during major incidents.</p>	<p>Protection of people and structures by improving tactical planning efficiency.</p>	<p>Wildfire Steering Committee and Ada County Dispatch</p>	<p>2006 Identify areas throughout the county and share information between all entities. 2006 Post staging area signing at appropriate locations.</p>
<p>5.3.g: Augment emergency water supply through establishment of dry hydrants and cisterns at designated locations</p>	<p>Protection of people and structures by improving water accessibility.</p>	<p>County Commissioners, Emergency Management, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and BLM.</p>	<p>2006 Areas in need of water source development include should be identified and incorporated into this plan.</p>

Table 5.3. Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.3.h: Access improvements of bridges, cattle guards, and limiting road surfaces</p>	<p>Protection of people, structures, infrastructure, and economy by improving access for residents and firefighting personnel in the event of a wildfire. Reduces the risk of a road failure that leads to the isolation of people or the limitation of emergency vehicle and personnel access during an emergency.</p>	<p>Ada County Highway Districts in cooperation with US Forest Service, BLM, State of Idaho (Lands and Transportation), and forestland or rangeland owners.</p>	<p>2006 Update existing assessment of travel surfaces, bridges, and cattle guards in Ada County as to location. Secure funding for implementation of this project (grants)</p> <p>2007 Conduct engineering assessment of limiting weight restrictions for all surfaces (e.g., bridge weight load maximums). Estimate cost of \$150,000 which might be shared between County, USFS, BLM, State, and private based on landownership associated with road locations.</p> <p>2007 Post weight restriction signs on all crossings, copy information to local fire districts and wildland fire protection agencies in affected areas. Estimate cost at roughly \$25-\$30,000 for signs and posting.</p> <p>2008 Identify limiting road surfaces in need of improvements to support wildland fire fighting vehicles and other emergency equipment. Develop plan for improving limiting surfaces including budgets, timing, and resources to be protected for prioritization of projects (benefit/cost ratio analysis). Create budget based on full assessment</p>

5.6 Resource and Capability Enhancements

There are a number of resource and capability enhancements identified by the local and wildland firefighting districts in Ada County. All of the needs identified by the districts are in line with increasing the ability to respond to emergencies in the WUI and are fully supported by the planning committee.

Specific reoccurring themes of needed resources and capabilities include:

- More water tenders for local fire districts with drafting capabilities at unimproved sites
- Improved radio capabilities within each district and for mutual aid operations
- Retention and recruitment of volunteers
- Training and development of local firefighters in structure and wildland fire

The implementation of each issue will rely on either the isolated efforts of the fire districts or a concerted effort by the county to achieve equitable enhancements across all of the districts. Given historic trends, individual departments competing against neighboring departments for grant monies and equipment will not necessarily achieve county wide equity. However, the Southwest Idaho RC&D may be an organization uniquely suited to work with all of the districts in Ada County and adjacent counties to assist in the prioritization of needs across district and even county lines. Once prioritized, the RC&D is in a position to assist these districts with identifying, competing for, and obtaining grants and equipment to meet these needs.

5.6.1 Proposed Activities

Table 5.4. WUI Action Items in Fire Fighting Resources and Capabilities.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.4.a: Develop comprehensive fire district growth plans that address issues associated with growing populations and integrate into county Comprehensive Plan.	Protection of people and structures by incorporating new developments and structures into fire protection districts.	Wildfire Steering Committee in cooperation with Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District .	2006 Establish community growth benchmarks for the expansion of district resources. Expand fire districts' planning horizon beyond five-years. Ongoing Activity: Evaluate need to expand district resources as set benchmarks are reached. Integrate plan into County Comprehensive Plan

Table 5.4. WUI Action Items in Fire Fighting Resources and Capabilities.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.4.b: Establishment or extension of fire protection to far east edges of County.	Protection of People and Structures by providing fire protection in areas of county are currently without structural fire protection.	Local residents in cooperation with the Wildfire Steering Committee, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and wildland fire districts.	2006 Engage community members as soon as possible to determine interest among community members. 2006-08 Provide materials, resources and assistance for those community members interested in chartering new districts.
5.4.c: Extension of Boise City Fire south of current boundary to address issues of fires in area between Boise and Kuna.	Protection of People and Structures by providing fire protection in areas of county are currently without adequate fire protection.	Local residents in cooperation with the Wildfire Steering Committee, Emergency Management, and Boise Fire Department.	2006 Engage community members to determine interest among community members. 2006-07 Determine operational needs and develop plan for district expansion.
5.4.d: Acquisition of additional brush apparatus and large capacity water tender for Boise Fire Department.	Protection of people and structures by direct firefighting capability enhancements.	Boise City Fire	2006 Determine equipment needs and secure funding.
5.4.e: Acquisition of six-wheeled ATV with tank and pump for North Ada County Fire and Rescue to respond to wildland fire incidents within the Boise Greenbelt.	Protection of people and structures by direct firefighting capability enhancements.	North Ada County Fire and Rescue and City of Boise Parks and Recreation.	2006 Secure funding source and purchase necessary equipment.
5.4.f: Acquisition of new brush engine for Meridian Fire Department.	Protection of people and structures by direct firefighting capability enhancements.	Meridian Fire Department	2006 Determine possibilities through BLM Rural Fire Assistance Program. 2007 Secure funding source and purchase necessary equipment.
5.4.g: Construction of new fire station in Meridian Fire District to keep up with demands of a growing population.	Protection of people and structures by direct firefighting capability enhancements.	Meridian Fire Department, Southwest Idaho RC&D, and Emergency Services.	2006 Develop expansion plan and determine station location. 2007 Develop cost estimates and secure funding. 2008 Complete construction and outfit station as necessary.

Table 5.4. WUI Action Items in Fire Fighting Resources and Capabilities.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.4.h: Acquisition of Type 3 or 4, four-wheel drive engine for Kuna Fire District.	Protection of people and structures by direct firefighting capability enhancements.	Kuna Fire District	2006 Determine possibilities through BLM Rural Fire Assistance Program. 2007 Secure funding source and purchase necessary equipment.
5.4.i: Acquisition of large capacity pumper-tanker for Melba Fire Department.	Protection of people and structures by direct firefighting capability enhancements.	Melba Fire Department	2006 Determine possibilities through BLM Rural Fire Assistance Program. 2007 Secure funding source and purchase necessary equipment.
5.4.j: Construction of new fire station in Melba Fire District to keep up with demands of a growing population.	Protection of people and structures by direct firefighting capability enhancements.	Melba Fire Department, Southwest Idaho RC&D and Emergency Services	2006 Develop expansion plan and determine station location. 2007 Develop cost estimates and secure funding. 2008 Complete construction and outfit station as necessary.
5.4.k: Enhance radio availability in each district, link into existing dispatch, and improve range within the region, update to new digital, narrow band frequency adopted by feds and state.	Protection of people and structures by direct firefighting capability enhancements.	Ada County Dispatch, Wildfire Steering Committee in cooperation with Statewide Interoperability Commission	2006 Summarize existing two-way radio capabilities and limitations. Identify costs to upgrade existing equipment and locate funding opportunities. 2007 Acquire and install upgrades as needed. 2007-08 Identify opportunities for radio repeater towers located in the region for multi-county benefits.
5.4.l: Addition of repeater in Stage Stop area in order to improve communications between far eastern edge of the county and dispatch.	Protection of people and structures by direct firefighting capability enhancements.	Southwest Idaho RC&D in cooperation with County Commissioners Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, and wildland fire districts.	2006 Summarize existing capabilities and limitations. Identify cost for equipment and installation and locate funding opportunities. 2007 Acquire and install needed equipment.

Table 5.4. WUI Action Items in Fire Fighting Resources and Capabilities.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.4.m: Retention of volunteer firefighters and dispatch.	Protection of people and structures by direct firefighting capability enhancements.	Wildfire Steering Committee, Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, Star Joint Fire Protection District, BLM, IDL, and USFS working with broad base of county citizenry.	2006 Develop an incentives program and implement it. Target an increased recruitment (+10%) and retention (+20% longevity) of volunteers
5.4.n: Increased training and capabilities of firefighters.	Protection of people and structures by direct firefighting capability enhancements.	Boise Fire Department, Meridian Fire Department, North Ada County Fire and Rescue, Eagle Fire District, Kuna Fire District, and Star Joint Fire Protection District working with the BLM, IDL, and USFS for wildland training opportunities and with the State Fire Marshall's Office for structural firefighting training.	2006 Develop a multi-county training schedule that extends 2 or 3 years in advance (continuously). 2006 Identify funding and resources needed to carry out training opportunities and sources to acquire. 2006 Begin implementing training opportunities for volunteers.

5.7 Regional Land Management Recommendations

Wildfires are a fact of life in Ada County. Wildland fires will continue to occur despite continuing efforts of all city, county, state and federal agencies within the county. However, active land management that modifies fuels, promotes healthy grassland and range conditions, and promotes the use of these natural resources (consumptive and non-consumptive) will insure that these lands will continue to provide value to residents of Ada County.

Of particular concern in Ada County is the spread of non-native vegetative species that alter natural ecological systems and degrade resource values for both wildlife, range and recreational use. The proliferation of cheatgrass and other exotic species threatens the biological integrity of the Foothills Region as well as the Snake River Birds of Prey Conservation Area. Efforts by local, state and federal agencies responsible for management of these lands should be encouraged.

5.7.1 Interstate 84 Corridor

Similar to the issues faced in the railroad right-of-way, the Interstate 84 corridor from Boise to Mountain Home, and to a lesser degree from Mountain Home to Glens Ferry, has historically experienced significant numbers of wildfire ignitions and rapid fire spread. This corridor also contains light, flashy fuels that become tinder dry during the summer months and it has a high volume of traffic.

Ignitions often occur from such vehicle-related causes as pulling off the road into the grass for mechanical or other reasons, overheating, tire blow-outs, overheated or lost bearings, axle or electrical problems, and more. The portion of this corridor near the community of Tipanuk, northwest of Mountain Home, was identified in mitigation planning during 2001 as needing some form of fire break.

BLM fire and fuels managers, in cooperation with the Idaho Transportation Department, are currently exploring methods and means to treat the right-of-way fuels and create a firebreak on both sides of, and in the median, of the Interstate from near Boise to Glenns Ferry. ITD currently contracts for mowing rights-of-way in a larger geographic area and the timing and frequency of mowing in the Boise-to-Glenns Ferry strip has not been sufficient to minimize fire hazards and ignitions.

Treatment options being explored range from the BLM, through the National Fire Plan, funding more frequent and time-focused mowing, to a complex, multi-year project involving mowing, herbicide applications, and seeding of more fire-resistant vegetation.

The completion of an area-wide environmental assessment, and field-testing and approval of an herbicide product focused on cheat grass control, both of which may be accomplished within the next year, may allow a comprehensive fuels management project to proceed through the I-84 corridor within the next few years. This treatment is also being considered for several other access and major roadways throughout the area.

In the short term, the BLM and ITD are exploring potential fuels treatments to reduce hazards in more localized projects focused on freeway interchanges and specific access roads.

Throughout the short- and long-term vision for fuels treatment in the I-84 corridor, consideration is being given for compliance with NEPA (National Environmental Protection Act) requirements, protection of existing stands of big sage, and other valued resources through the right-of-way.

5.7.2 Proposed Activities

Table 5.5. Action Items for Regional Land Management Recommendations.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.5.a: Continue or initiate aggressive cheatgrass abatement program on rangeland ecosystems throughout Ada County.	Regional Land Management Recommendations in order to ensure integrity of grassland and rangeland ecosystems through the control of exotic vegetation.	BLM, Idaho Fish and Game, City of Boise, City of Garden City, City of Eagle, City of Meridian, City of Star, City of Kuna, IDL, USFS, Boise Parks and Recreation, Ada County Weed and Pest Control in cooperation with other entities including the County Commissioners.	2006 Continue with weed control and abatement programs where they already exist. Develop and implement comprehensive weed control program on targeted areas. Subsequent Years: Continue monitoring and control efforts through the long term.
5.5.b: Create a buffer along major roadways and along interface streets throughout the Boise Foothills to reduce the probability of roadside ignitions.	Regional Land Management Recommendations in order to ensure integrity of grassland and rangeland ecosystems through the reducing potential for wildland fire events originating along roadways.	Idaho Fish and Game, City of Boise Parks and Recreation, IDL, BLM, USFS, and private landowners in the foothills region.	2006 Determine best means by which to control roadside vegetation and implement control program immediately. Subsequent Years: Continue monitoring and control efforts through the long term.

Table 5.5. Action Items for Regional Land Management Recommendations.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.5.c Fire awareness and prevention signage in high use areas	Regional Land Management Recommendation in order to make the public aware of fire related issues when recreating on public lands in the county	BLM, Idaho Fish and Game, City of Boise, City of Garden City, City of Eagle, City of Meridian, City of Star, City of Kuna, IDL, USFS, Boise Parks and Recreation, Ada County Weed and Pest Control in cooperation with other entities including the County Commissioners.	2006 Determine best signage location and verbiage. 2007 Secure funding and install signs.
5.5.d: Foothills East Project.	Improve public safety and ecosystem health by implementing projects in the eastern Ada County Foothills. Objectives: 1) Lower the FRCC to a 1, 2) Eliminate or reduce noxious weeds, 3) Eliminate or reduce invasive annual grass, 4) Enhance and/or restore watershed health, and 5) Improve wildlife habitat. These actions will increase public safety and save tax dollars by returning fire to its natural role in the environment.	Bureau of Land Management, Southwest Idaho RC&D, City of Boise, and other willing participants.	Seek out additional willing partners and work on overall project strategy and goals. 2007 Begin the NEPA process for the project. Ongoing: Establish a demonstration site near the Foothills Learning Center, continue NEPA process, and upon completion of NEPA process begin to implement projects.
5.5.e: Kuna Fuel Break Project.	Protection of private property and sensitive species plant habitat (<i>Lepidium papilliferum</i>) in the wildland urban interface.	Bureau of Land Management.	2006 Begin planning phase. 2007 Once planning phase is complete, begin implementation of proposed projects.
5.5.f: <i>Lepidium papilliferum</i> (slickspot peppergrass) fuel breaks.	Protection of sensitive species plant habitat (<i>Lepidium papilliferum</i> , slickspot peppergrass).	Bureau of Land Management and any other willing partners.	Ongoing: Begin planning, secure funding, and start implementation phase.
5.5.g: Fenceline burning.	Remove the hazardous fuels that collect along fencelines such as tumbleweeds to improve firefighter safety during times of high fire danger.	Bureau of Land Management and any other willing partners.	Implement project annually or as needed. 2007 Update environmental documentation.

Table 5.5. Action Items for Regional Land Management Recommendations.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.5.h: Establish a cooperative weed management area to manage weeds on all jurisdictions in Ada County in order to develop a strong weed control program consisting of education, public outreach, prevention, detection, eradication, integrated control methods, and monitoring.</p>	<p>Maintain weed-free status in areas that are weed free and stop or control the spread of established weeds.</p>	<p>Ada County Weed Control, Idaho Fish and Game, Idaho Department of Agriculture, U.S. Forest Service, Bureau of Land Management, City of Boise, USDA Natural Resource Conservation Service, Idaho Department of Lands, Army Corps of Engineers, and interested corporations and non-profit groups.</p>	<p>2006 Establish a Memorandum of Understanding with all participants. Ongoing: Seek funding and implement projects in the areas of education, control, eradication, monitoring, detection, and mapping.</p>

Chapter 8: Potential Mitigation Activities

8 Administration & Implementation Strategy

Critical to the implementation of this All Hazard Mitigation Plan will be the identification of, and implementation of, an integrated schedule of treatments targeted at achieving an elimination of the lives lost, and reduction in structures destroyed, infrastructure compromised, and unique ecosystems damaged that serve to sustain the way-of-life and economy of Ada County and the region. Since there are many management agencies and thousands of private landowners in Ada County, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across all ownerships.

Ada County encourages the philosophy of instilling disaster resistance in normal day-to-day operations. By implementing plan activities through existing programs and resources, the cost of mitigation is often a small portion of the overall cost of a project's design or program.

The federal land management agencies in Ada County, specifically the Bureau of Land Management, are participants in this planning process and have contributed to its development. Where available, their schedule of land treatments have been considered in this planning process to better facilitate a correlation between their identified planning efforts and the efforts of Ada County.

All risk assessments were made based on the conditions existing during 2005-06, thus, the recommendations in this section have been made in light of those conditions. However, the components of risk and the preparedness of the county's resources are not static. It will be necessary to fine-tune this plan's recommendations annually to adjust for changes in the components of risk, population density changes, infrastructure modifications, and other factors.

As part of the Policy of Ada County in relation to this planning document, this entire **All Hazard Mitigation Plan** should be reviewed annually at a special meeting of the Ada County Commissioners, open to the public and involving all municipalities/jurisdictions, where action items, priorities, budgets, and modifications can be made or confirmed. A written review of the plan should be prepared (or arranged) by the Chairman of the County Commissioners, detailing plans for the year's activities, and made available to the general public ahead of the meeting (in accord with the Idaho Open Public Meeting Laws). Amendments to the plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the All Hazards Mitigation Plan. Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

8.1 Prioritization of Mitigation Activities

The prioritization process will include a special emphasis on cost-benefit analysis review. The process will reflect that a key component in funding decision is a determination that the project will provide an equivalent or more in benefits over the life of the project when compared with the costs. Projects will be administered by local jurisdictions with overall coordination provided by the Ada County Emergency Management Director.

County Commissioners and the elected officials of all jurisdictions will evaluate opportunities and establish their own unique priorities to accomplish mitigation activities where existing funds and resources are available and there is community interest in implementing mitigation measures. If no federal funding is used in these situations, the prioritization process may be less formal. Often the types of projects that the County can afford to do on their own are in relation to

improved codes and standards, department planning and preparedness, and education. These types of projects may not meet the traditional project model, selection criteria, and benefit-cost model. The County will consider all pre-disaster mitigation proposals brought before the County Commissioners by department heads, city officials, fire districts and local civic groups.

When federal or state funding is available for hazard mitigation, there are usually requirements that establish a rigorous benefit-cost analysis as a guiding criterion in establishing project priorities. The county will understand the basic federal grant program criteria which will drive the identification, selection, and funding of the most competitive and worthy mitigation projects. FEMA's three grant programs (the post-disaster Hazard Mitigation Grant Program, the pre-disaster Flood Mitigation Assistance and Pre-Disaster Mitigation grant programs) that offer federal mitigation funding to state and local governments all include the benefit-cost and repetitive loss selection criteria.

The prioritization of projects will occur annually and be facilitated by the County Emergency Management Director to include the County Commissioner's Office, City Mayors and Councils, Fire District Chiefs and Commissioners, agency representatives (BLM, Idaho Department of Lands, etc.). The prioritization of projects will be based on the selection of projects which create a balanced approach to pre-disaster mitigation which recognizes the hierarchy of treating in order (highest first):

- People and Structures
- Infrastructure
- Local and Regional Economy
- Traditional Way of Life
- Ecosystems

8.1.1 Prioritization Scheme

A numerical scoring system is used to prioritize projects. This prioritization serves as a guide for the county when developing mitigation activities. This project prioritization scheme has been designed to rank projects on a case by case basis. In many cases, a very good project in a lower priority category could outrank a mediocre project in a higher priority. The county mitigation program does not want to restrict funding to only those projects that meet the high priorities because what may be a high priority for a specific community may not be a high priority at the county level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying reasons and criteria is a necessity for a functional mitigation program at the County and community level.

To implement this case by case concept, a more detailed process for evaluating and prioritizing projects has been developed. Any type of project, whether county or site specific, will be prioritized in this more formal manner.

To prioritize projects, a general scoring system has been developed. This prioritization scheme has been used in statewide all hazard mitigations plans. These factors range from cost-benefit ratios, to details on the hazard being mitigated, to environmental impacts.

Since planning projects are somewhat different than non-planning projects when it comes to reviewing them, different criteria will be considered, depending on the type of project.

The factors for the non-planning projects include:

- Cost/Benefit
- Population Benefit
- Property Benefit

- Economic Benefit
- Project Feasibility (environmentally, politically, socially)
- Hazard Magnitude/Frequency
- Potential for repetitive loss reduction
- Potential to mitigate hazards to future development
- Potential project effectiveness and sustainability

The factors for the planning projects include:

- Cost/Benefit
- Vulnerability of the community or communities
- Potential for repetitive loss reduction
- Potential to mitigate hazards to future development

Since some factors are considered more critical than others, two ranking scales have been developed. A scale of 1-10, 10 being the best, has been used for cost, population benefit, property benefit, economic benefit, and vulnerability of the community. Project feasibility, hazard magnitude/frequency, potential for repetitive loss reduction, potential to mitigate hazards to future development, and potential project effectiveness and sustainability are all rated on a 1-5 scale, with 5 being the best. The highest possible score for a non-planning project is 65 and for a planning project is 30.

The guidelines for each category are as follows:

8.1.1.1 Benefit / Cost

The analysis process will include summaries as appropriate for each project, but will include benefit / cost analysis results. Projects with a negative benefit / cost analysis result will be ranked as a 0. Projects with a positive Benefit / Cost analysis will receive a score equal to the projects Benefit / Cost Analysis results divided by 10. Therefore a project with a BC ratio of 50:1 would receive 5 points, a project with a BC ratio of 100:1 (or higher) would receive the maximum points of 10.

8.1.1.2 Population Benefit

Population Benefit relates to the ability of the project to prevent the loss of life or injuries. A ranking of 10 has the potential to impact over 3,000 people. A ranking of 5 has the potential to impact 100 people, and a ranking of 1 will not impact the population. In some cases, a project may not directly provide population benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects the population, but should not be considered to have no population benefit.

8.1.1.3 Property Benefit

Property Benefit relates to the prevention of physical losses to structures, infrastructure, and personal property. These losses can be attributed to potential dollar losses. Similar to cost, a ranking of 10 has the potential to save over \$1,000,000 in losses, a ranking of 5 has the potential to save roughly \$100,000 in losses, and a ranking of 1 only has the potential to save less than \$100 in losses. In some cases, a project may not directly provide property benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects property, but should not be considered to have no property benefit.

8.1.1.4 Economic Benefit

Economic Benefit is related to the savings from mitigation to the economy. This benefit includes reduction of losses in revenues, jobs, and facility shut downs. Since this benefit can be difficult to evaluate, a ranking of 10 would prevent a total economic collapse, a ranking of 5 could prevent losses to about half the economy, and a ranking of 1 would not prevent any economic losses. In some cases, a project may not directly provide economic benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly affects the economy, but should not be considered to have no economic benefit.

8.1.1.5 Vulnerability of the Community

For planning projects, the vulnerability of the community is considered. A community that has a high vulnerability with respect to other jurisdictions to the hazard or hazards being studied or planned for will receive a higher score. To promote planning participation by the smaller or less vulnerable communities in the state, the score will be based on the other communities being considered for planning grants. A community that is the most vulnerable will receive a score of 10, and one that is the least, a score of 1.

8.1.1.6 Project Feasibility (Environmentally, Politically & Socially)

Project Feasibility relates to the likelihood that such a project could be completed. Projects with low feasibility would include projects with significant environmental concerns or public opposition. A project with high feasibility has public and political support without environmental concerns. Those projects with very high feasibility would receive a ranking of 5 and those with very low would receive a ranking of 1.

8.1.1.7 Hazard Magnitude/Frequency

The Hazard Magnitude/Frequency rating is a combination of the recurrence period and magnitude of a hazard. The severity of the hazard being mitigated and the frequency of that event must both be considered. For example, a project mitigating a 10-year event that causes significant damage would receive a higher rating than one that mitigates a 500-year event that causes minimal damage. For a ranking of 5, the project mitigates a high frequency, high magnitude event. A 1 ranking is for a low frequency, low magnitude event. Note that only the damages being mitigated should be considered here, not the entire losses from that event.

8.1.1.8 Potential for repetitive loss reduction

Those projects that mitigate repetitive losses receive priority consideration here. Common sense dictates that losses that occur frequently will continue to do so until the hazard is mitigated. Projects that will reduce losses that have occurred more than three times receive a rating of 5. Those that do not address repetitive losses receive a rating of 1.

8.1.1.9 Potential to mitigate hazards to future development

Proposed actions that can have a direct impact on the vulnerability of future development are given additional consideration. If hazards can be mitigated on the onset of the development, the county will be less vulnerable in the future. Projects that will have a significant effect on all future

development receive a rating of 5. Those that do not affect development should receive a rating of 1.

8.1.1.10 Potential project effectiveness and sustainability

Two important aspects of all projects are effectiveness and sustainability. For a project to be worthwhile, it needs to be effective and actually mitigate the hazard. A project that is questionable in its effectiveness will score lower in this category. Sustainability is the ability for the project to be maintained. Can the project sustain itself after grant funding is spent? Is maintenance required? If so, are or will the resources be in place to maintain the project. An action that is highly effective and sustainable will receive a ranking of 5. A project with effectiveness that is highly questionable and not easily sustained should receive a ranking of 1.

8.1.1.11 Final ranking

Upon ranking a project in each of these categories, a total score can be derived by adding together each of the scores. The project can then be ranking high, medium, or low based on the non-planning project thresholds of:

Project Ranking Priority Score

- High 40-65
- Medium 25-39
- Low 9-25

8.2 Recommended Hazard Mitigation Activities

As part of the implementation of hazard mitigation activities in Ada County, a variety of management tools may be used. Recommendations are presented in five broad categories based on their characteristics.

8.2.1 Policy Actions

Hazard mitigation efforts must be supported by a set of policies and regulations at the county level that maintain a solid foundation for safety and consistency. The recommendations enumerated here serve that purpose. Because these items are regulatory in nature, they will not necessarily be accompanied by cost estimates. These recommendations are policy related in nature and therefore are recommendations to the appropriate elected officials; debate and formulation of alternatives will serve to make these recommendations suitable and appropriate.

8.2.1.1 Proposed Activities

Table 8.1. Action Items in Safety and Policy Actions.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.1.a. Public education programs.	All Hazards	Cooperative effort including Ada County, Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star, the SW ID RC&D, Idaho Bureau of Homeland Security, federal and state agencies.	<ul style="list-style-type: none"> • 2006 Identify teaching partners in public education program • 2007 Locate and adopt training materials appropriate for local conditions • 2007 Develop budgets and acquire funding for desired programs • 2008 Begin implementation in schools and through adult education programs.
8.1.b. Adoption and enforcement of International Building Codes and/or more stringent hazard--related building code provisions.	All Hazards	Ada County Commissioners, Ada County Building Department, and Emergency Management Director, Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star.	<ul style="list-style-type: none"> • 2006 Annual review of IBC updates and relevance to hazards in county. • 2006 Identification of city codes in need of policy enhancements
8.1.c. Implement land-use and development policy to reduce exposure to hazards.	All Hazards	Ada County Commissioners, Ada County Building Department, and Emergency Management Director, Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star	<ul style="list-style-type: none"> • 2006 Review of hazard mapping in updating County Comprehensive Plan. • 2006-10: Municipality identification of specific resources at risk as identified by this plan's hazard profile mapping and identification of land use policy to limit or restrict new developments in the at-risk areas.
8.1.d. Develop a landslide hazard identification program.	Landslide, Flood, Wildfire, and Earthquake	Ada County Commissioners, County Highway Districts, Planning and Zoning, cooperatively with Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star	<ul style="list-style-type: none"> • 2006 Review of landslide hazard mapping in updating County Comprehensive and Transportation Plans. • 2007 Draft recommendations for housing site plans in Landslide prone areas.
8.1.e. Standardize practices for excavation, construction, and grading of roads.	Wildfire, Flood, Earthquake, and Landslides	Ada County Commissioners, Ada County Highway Districts, Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star	<ul style="list-style-type: none"> • 2006 Draft recommendations for road location and standards in landslide prone areas.

Table 8.1. Action Items in Safety and Policy Actions.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.1.f. Conduct a review of local ordinances, policies, and comprehensive plans to characterize current policies related to the Boise River and inconsistencies among jurisdictions.	Flood and Landslide	Ada County Commissioners, Ada City-County Emergency Management, Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star.	<ul style="list-style-type: none"> • 2006 Conduct review of ordinances and policies over all jurisdictions. • 2006 Determine adequacy of standards regarding minimization of impacts to adjacent and downstream areas. • 2007 Develop implementation plan to alleviate inadequacies and/or ratify more effective standards
8.1.g. Increase participation in National Flood Insurance Program.	Flood	Ada County Commissioners, Ada County Building Department, Emergency Management Director, Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star	<ul style="list-style-type: none"> • On going: Continued participation in NFIP, increase participation. • 2007 Participation in the Community Rating System to lower the costs of NFIP premiums.
8.1.h. Rural signage (road signs & rural fire district boundary signs) improvements across the county.	All Hazards	Highway Districts in cooperation with County Commissioners and City and Rural Fire Departments	<ul style="list-style-type: none"> • Can be completed during year 1 (2006) pending funding to implement the project. Estimate \$15,000 for signs and posting.
8.1.i. Enforce a policy to engineer bridge and culvert crossings on canals with the same standards as river and stream bridges and culverts.	Flood	Ada County Commissioners, County Highway Districts, and the Idaho Transportation Department.	<ul style="list-style-type: none"> • 2006 Draft recommendations for bridge and culvert standards on canals.
8.1.j. Complete All Hazards Mitigation Plan for additional Hazards	All Hazards	Ada County Commissioners, Emergency Management, Bureau of Homeland Security, and Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star.	<ul style="list-style-type: none"> • Seek out funding during 2006-07 for additional funding to complete other hazards included in the Phase I Hazard Profile, but not completed here.
8.1.k. Form committee to examine critical infrastructure & shelters to make them conform to population needs and potential response during emergencies.	All Hazards	Ada County Commissioners, Emergency Management, Bureau of Homeland Security, and Cities of Boise, Meridian, Eagle, Kuna, Garden City, Star.	<ul style="list-style-type: none"> • 2006: Form county-wide citizens committee with specialists identified by Ada City-County Emergency Management office. • 2006-07: develop recommendations based on review of emergency response evaluations.

8.2.2 Home and Business Protection Measures

The protection of people and structures will be tied together closely as the loss of life in the event of a natural hazard is generally linked to a person who could not, or did not, flee a structure threatened by a hazard. Many of the recommendations in this section will define a set of criteria for implementation while others will be rather specific in extent and application.

8.2.2.1 Proposed Activities

Table 8.2. Action Items for Home and Business Protection.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.2.a. Assess and hardwire emergency facilities and shelters throughout Ada County for use with a portable generator.	All Hazards	Ada County Commissioners, Sheriff's Office, Emergency Management Director, and Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star.	<ul style="list-style-type: none"> • 2006 Assess which buildings in the county require alternative power during emergencies. • 2006 Cost benefit assessment of providing portable power. • 2006 Secure grant funding through PDM grants or others for the wiring of buildings and purchase of portable generators with capacity to power needed buildings. • 2007 Implement wiring changes to allow quick connection for off-grid power.
8.2.b. Obtain needed resources for health care facilities, community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc.)	All Hazards	Ada County Commissioners, Red Cross, City of Boise, City of Garden City, City of Eagle, City of Meridian, City of Star, City of Kuna, St. Luke's Regional Medical Center, Saint Alphonsus Regional Medical Center, VA Medical Center, all Senior Centers, Community Halls, and other potential shelters.	<ul style="list-style-type: none"> • 2006 Identify and obtain funding for needed supplies. • 2006 Address storage issue for each facility. • 2006-07 Acquire recommended resources. • Ongoing: Train personnel on use and maintenance of supplies
8.2.c. Encourage residents in high risk areas (Flood zones, Boise Foothills) to purchase NOAA Weather Alert Radios.	All Hazards	Ada County Commissioners, City of Boise, City of Garden City, City of Eagle, City of Meridian, City of Star, City of Kuna, North Ada Search and Rescue, Boise Fire Department, Meridian Fire Department, Star Joint Fire Protection District, Eagle Fire Department, and Kuna Fire District.	<ul style="list-style-type: none"> • 2006 Provide educational materials regarding NOAA Weather Alert radios to residents and property owners in high risk areas. • 2006 Establish program to provide NOAA Weather Alert radios at a low cost to interested residents.

Table 8.2. Action Items for Home and Business Protection.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.2.d. Inspect buildings, particularly un-reinforced masonry, for hazard stability.	All Hazards, especially earthquake	Ada County Building Department	<ul style="list-style-type: none"> • 2007 Bi-annual review of older Masonry buildings. • 2007 Education campaign, information dissemination
8.2.e. Implement the community detailed recommendations listed in this plan by hazard.	All Hazards	Ada City-County Emergency management Office, and the Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star.	<ul style="list-style-type: none"> • Ongoing: variable implementation schedule based on the identification of budgets, resources, protection measures, and adoption schedules.
8.2.f. Access improvements of bridges, cattle guards, culverts, and limiting road surfaces (e.g. alt routes to Interstate 84)	All Hazards	Highway Districts in cooperation with the USFS, BLM, State of Idaho (Lands and Transportation), Cities, and private landowners.	<ul style="list-style-type: none"> • 2006 Update existing assessment of travel surfaces, bridges, and cattle guards in Ada County as to location. Secure funding for implementation of this project (grants) • 2007 Conduct engineering assessment of limiting weight restrictions for all surfaces (e.g., bridge weight load maximums). Costs may be shared between County, Cities, BLM, State, and private based on landownership associated with road locations. • 2007 Post weight restriction signs on all limiting crossings, copy information to rural fire districts and wildland fire protection agencies in affected areas. Estimate cost at roughly \$15-\$25,000 for signs and posting. • 2008 Identify limiting road surfaces in need of improvements to support traffic or emergency vehicles and other emergency equipment. Develop plan for improving limiting surfaces including budgets, timing, and resources to be protected for prioritization of projects (benefit/cost ratio analysis). Create budget based on full assessment.
8.2.g. Evaluate the 3,000+ structures in Ada County which are located in the flood zone to determine protection measures needed to protect the structure (elevation of structure, barrier), create budget for implementation, and implement. Approximate value at risk is \$5.9 billion.	Flood	Ada City-County Emergency management Office, and the Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star.	<ul style="list-style-type: none"> • 2006-07: Develop plan for physical inspection of each structure in the flood plain to determine exposure to flood damage, and record findings in geodatabase. • 2007: Develop strategy for protecting the inspected structures and work with homeowner to identify costs and funding sources • 2007: Implement findings into planning and zoning codes of county to insure that new structures are not built in a way which places new structures at-risk.

Table 8.2. Action Items for Home and Business Protection.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.2.h. Reinforce the 23 well intakes in the county which are within the flood zone.	Flood	Ada City-County Emergency management Office, and the Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star.	<ul style="list-style-type: none"> • 2006: Evaluate all well intakes in the flood zone for operations during and after a flood • 2006-07: develop implementation plan and potential funding sources for hardening these infrastructure resources. • Ongoing: maintain these structures for sustainable operations.
8.2.i: Implement a project to fund the reconstruction or raising of foundations on homes that predate the existing Flood Insurance Rate Maps and are in the flood zone. This will help reduce the cost of repeated flood problems on the same structures in the flood plain.	Flood	Ada County Commissioners, Ada City-County Emergency Management, City of Boise, City of Garden City, City of Eagle, City of Meridian, City of Star, City of Kuna, and affected homeowners.	<ul style="list-style-type: none"> • 2006 Develop a project to seek funding to assist identified homeowners with the reconstruction of foundations of homes in the flood plain. • 2007 Seek funding and begin contacting homeowners. • Ongoing: Implement individual structure projects on as many homes as funding allows on an annual basis.
8.2.j. Install audible warning system (sirens) in each city hall building in the county for emergency warning system.	All hazards	Ada City-County Emergency management Office, County Commissioners, and the Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star.	<ul style="list-style-type: none"> • 2006: Develop budget and logistics of installing the system, seek funding. • 2007: Install siren system and link its activation to each city and the Ada City-County Emergency management Office as a system of emergency warning.

8.2.3 Infrastructure Hardening

Significant infrastructure refers to the communications, transportation (road and rail networks), energy transport supply systems (gas and power lines), and water supply that service a region or a surrounding area. All of these components are important to Treasure Valley and to Ada County specifically. Without supporting infrastructure a community's structures may be protected, but the economy and way of life lost. As such, a variety of components will be considered here in terms of management philosophy, potential policy recommendations, and on-the-ground activities. This issue is especially important to Ada County as the political and business hub of the State.

Infrastructure hardening is a term used here to signify the process of making critical infrastructure components more resistant to likely hazards to be faced based on their location, characteristics, and exposure.

8.2.3.1 Proposed Activities

Table 8.3. Action Items for Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
8.3.a. Review bridge and culverts along all Primary Access Routes identified in this plan that cross through flood zones.	Flood and Landslides	Ada County Commissioners, County Highway Districts, and Idaho Transportation Department	<ul style="list-style-type: none"> • 2006 review the bridge crossings and culverts along primary access routes in the county to determine restrictions in cases of flooding. • 2006 Develop replacement needs list to make crossings suitable to allow flood water passage or road relocations where needed. • 2007 Create implementation plan for making changes.
8.3.b. Conduct risk assessment of gravel mining in the Boise River channel and adjacent floodplain for both commercial operations and annual channel maintenance.	Flood and Severe Weather	Ada County Commissioners, Ada County Public Works, City of Boise, City of Garden City, City of Eagle, and City of Star.	<ul style="list-style-type: none"> • 2006 Summarize research and case studies from other regions illustrating responses and risks of gravel mining in rivers and floodplains. • 2006 Reconstruct the events leading up to the two prior pit captures that have occurred on the Boise River. • 2007 Synthesize this information to develop recommendations for policy implementation on the Boise River regarding the permitting and the long term liabilities.
8.3.c. Review bridge and culverts along all public roads identified in this plan that cross through flood zones.	Flood and Landslides	Ada County Commissioners, County Highway Districts, and Idaho Transportation Department	<ul style="list-style-type: none"> • 2006 review the bridge crossings and culverts along public roads in the county to determine restrictions in cases of flooding. • 2007 Develop replacement needs list to make crossings suitable to allow flood water passage or road relocations where needed. • 2007 Create implementation plan for making changes.

Table 8.3. Action Items for Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>8.3.d. Conduct feasibility study to install debris catchment structures in the Boise River system upstream of critical access crossings, and develop program for maintaining these structures during flooding events with high debris flow.</p>	Flood	<p>Ada City-County Emergency Management Office, Ada County Highway District, Idaho Department of Transportation, Idaho Water Resources Division</p>	<ul style="list-style-type: none"> • 2006: Determine where debris management in the Boise River system is the largest (upstream and below confluences) and impacts bridge crossings the most • 2006-07: engineer debris catchment in-stream and mechanical process to clean the debris from the channel • 2008: Implement best findings
<p>8.3.e. Review all road profiles which are within flood zones to determine degree of road profile rise needed to elevate it above the flood zone.</p>	Flood	<p>Ada County Commissioners, County Highway Districts, Idaho Transportation Department, and Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star</p>	<ul style="list-style-type: none"> • Review road surfaces and complete engineering study. • Create a priority list of modifications to road surfaces. • Work with road departments to schedule reconstruction projects.
<p>8.3.f. Post FEMA “Emergency Evacuation Route” signs along the identified primary, secondary and escape access routes in the county.</p>	All Hazards	<p>County Commissioners in cooperation with Rural Fire Districts and County Highway Districts, and Cities of Boise, Garden City, Eagle, Meridian, Kuna, and Star</p>	<ul style="list-style-type: none"> • Purchase of signs (2006). • Posting roads and make information available to residents of the importance of Emergency Routes
<p>8.3.g. Widen Seaman Gulch Road to serve as a primary evacuation route.</p>	All Hazards	<p>County Commissioners and County Highway Districts.</p>	<ul style="list-style-type: none"> • 2006 Review current status of Seaman Gulch Road and develop a plan for improvements. • 2007 Develop implementation plan for reconstruction project.
<p>8.3.h. Stabilize, widen, and pave Dry Creek Road.</p>	All Hazards	<p>County Commissioners, County Highway Districts, Dry Creek community, and neighboring Dry Creek landowners.</p>	<ul style="list-style-type: none"> • 2006 Evaluate current status of Dry Creek Road and make recommendations for improvements. • 2007 Develop implementation plan, locate funding, and begin working with adjacent landowners.

Table 8.3. Action Items for Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
8.3.i. Reinforcement of the FEMA “Emergency Evacuation Routes” in the county to insure these routes can be maintained in the case of an emergency.	All Hazards	County Commissioners in cooperation with Rural Fire Districts and County Highway Districts.	<ul style="list-style-type: none"> • Full assessment of road defensibility and ownership participation (2006). • Implementation of projects
8.3.j. Reinforce or replace head gates on canals to stabilize them during flood events and mud slides	Flood, Debris flows (mainly Boise Area)	Irrigation Districts in cooperation with the Ada City-County Emergency Management Office	<ul style="list-style-type: none"> • 2006-07: Identify status of all head gates on canals and make priority list of replacements • 2007: Secure funding for needed modifications • 2007-09: replace substandard head gates
8.3.k. Enlarge culverts and place debris catchment upstream of the railroad crossing in Meridian.	Flood	City of Meridian, Idaho Department of Transportation	<ul style="list-style-type: none"> • 2006: Identify modifications to harden this infrastructure resource • 2007-08: modify structures and place debris catchment (as needed)

8.2.4 Resource and Capability Enhancements

There are a number of resource and capability enhancements identified by the emergency management office in Ada County. Additionally many communities have identified additional resources and infrastructure needed to protect and people during natural and man made hazards.

8.2.4.1 Proposed Activities

Table 8.4. Action Items for Resource and Capability Enhancements.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.4.a. Obtain portable generators for use in Ada County during power outages and other emergency situations.	All Hazards	Ada County Commissioners, Sheriffs Office, and Emergency Management Director	<ul style="list-style-type: none"> • 2006 Coordinate with Item 8.2.a • 2007 Secure funding for generator purchase • 2006 Determine where generators will be stored and who will maintain
8.4.b. Acquire two portable generators for the community of Kuna.	All Hazards	Kuna City Council, Kuna Fire District, and Kuna Police Department.	<ul style="list-style-type: none"> • 2006 Coordinate with Item 8.2.a. • 2006 Determine where generators will be stored and who will maintain. • 2007 Secure funding for generator purchase.

Table 8.4. Action Items for Resource and Capability Enhancements.

Action Item	Mitigated Hazard	Responsible Organization	Action Items & Planning Horizon
8.4.c. Obtain needed resources to provide law enforcement with access control capabilities during disaster events.	All Hazards	Ada County Commissioners, Ada County Law Enforcement, Idaho State Police, Boise Police Department, Garden City Police Department, Eagle Police Department, Meridian Police Department, Star Police Department, and Kuna Police Department.	<ul style="list-style-type: none"> • 2006 Identify needed resources and obtain funding. • 2007 Acquire additional equipment and training needed.
8.4.d. Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potentially hazards, particularly the flood zone.	All Hazards	Ada County Commissioners, Ada County Emergency Management Director, County emergency service organizations, city emergency service organizations, private emergency service organizations, and area medical facilities.	<ul style="list-style-type: none"> • 2006 Conduct review of structure and equipment locations. • 2007 Move structures and equipment currently at risk to hazards to safer locations.
8.4.e. Maintain snow removal equipment and schedule for communities and primary transportation routes.	Winter Storm	County Road Department	<ul style="list-style-type: none"> • Annual review of equipment and community snow removal needs to determine if operable equipment is adequate.