2022 Ada County Multi-Hazard Mitigation Plan

April 2023

Volume 1
Countywide Elements

TETRA TECH

2022 Ada County Multi-Hazard Mitigation Plan

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April 2023

PREPARED FOR

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DEFINITIONS

1 Percent Annual Chance Flood—The level of flooding that has a 1 percent chance of being equaled or exceeded in any given year. Though often referred to as the "100-year flood," this event can occur more than once in a relatively short period of time.

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/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.

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.

BLM—Bureau of Land Management

BRIC—Building Resilient Infrastructure and Communities

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.

CDBG-DR—Community Development Block Grant Disaster Recovery grants

CDC—U.S. Centers for Disease Control and Prevention

CFR—Code of Federal Regulations

cfs—cubic feet per second

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.

COMPASS—Community Planning Association of SW Idaho

Critical Facility—A critical facility is one that is deemed vital to the Ada County planning area's ability to provide essential services while protecting life and property. A critical facility may be a system or an asset, either physical or virtual, the loss of which would have a profound impact on the security, economy, public health or safety, environment, or any combination of thereof, across the planning area.

CRS—Community Rating System

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 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.

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

Debris Avalanche—A debris flow that travels faster than about 10 miles per hour (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.

DFIRM—Digital Flood Insurance Rate Maps

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. The DMA established a pre-disaster hazard mitigation program and new requirements for the national post-disaster hazard mitigation grant program.

DMA—Disaster Mitigation Act

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.

EMAP—Emergency Management Accreditation Program

EMCR—Ada County Emergency Management & Community Resilience

EPA—U.S. Environmental Protection Agency

ESA—Endangered Species Act

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.

FEMA—Federal Emergency Management Agency

FERC—Federal Energy Regulatory Commission

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.

FIRM—Flood Insurance Rate Map

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.

FMA—Flood Mitigation Assistance

FRCC—Fire Regime Condition Class

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.

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.

GIS—Geographic Information System

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).

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

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

Hazus—Hazus is a GIS-based program used to support the development of risk assessments as required under the DMA. The Hazus software program assesses risk in a quantitative manner to estimate damages and losses associated with natural hazards. Hazus is FEMA's nationally applicable, standardized methodology and software program and contains modules for estimating potential losses from earthquakes, floods and wind hazards. Hazus has also been used to assess vulnerability (exposure) for other hazards.

HMGP—Hazard Mitigation Grant Program

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.

IBC—International Building Code

IDWR—Idaho Department of Water Resources

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 50,000ºF. 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.

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.

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

NASA—National Aeronautics and Space Administration

NEHRP—National Earthquake Hazards Reduction Program

NFIP—National Flood Insurance Program

NOAA—National Oceanic and Atmospheric Administration

NRC—Nuclear Regulatory Commission

NWS—National Weather Service

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.

PCB— Polychlorinated biphenyls

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.

Performance Period—The five-year period after a local hazard mitigation plan is adopted before it expires and the adopting jurisdiction loses eligibility for some federal hazard mitigation funding

PGA—Peak ground acceleration

PIO—public information officer

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, or two paid flood losses in excess of $1000 within any 10-year period since 1978, or three or more paid losses that equal or exceed the current value of the insured property.

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—The relative rating of hazards based on their probability of occurrence and their expected impact on people, property and the economy.

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.

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

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.

SFHA—Special Flood Hazard Area

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.

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 30%.

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.

TENORM—Technologically Enhanced Naturally Occurring Radioactive Material

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.

USDA—U.S. Department of Agriculture

USDM—U.S. Drought Monitor

USGS—U.S. Geological Survey

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.

Wildland-Urban Interface Area—The geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

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.

WUI—Wildland Urban Interface

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.

EXECUTIVE SUMMARY

Hazard mitigation is the use of long-term and short-term policies, programs, projects, and other activities to alleviate the death, injury, and property damage that can result from a disaster. Ada County developed an updated hazard mitigation plan in partnership with the following local governments within the county:

- City of Boise
- City of Eagle
- City of Garden City
- City of Kuna
- City of Meridian
- City of Star
- Ada County Highway District
- Eagle Fire District
- Eagle Sewer District
- Eagle Urban Renewal Agency
- Flood Control District #10
- Greater Boise Auditorium District
- Independent School District of Boise
- Joint School District #2
- Kuna Rural Fire Protection District
- Meridian Development Corporation
- North Ada Co. Fire and Rescue
- Star Joint Fire Protection District
- Star Sewer District
- Whitney Fire Protection District

The hazard mitigation plan defines measures to reduce risks from natural disasters in the Ada County planning area, which consists of the entire county. The plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs for all planning partners. It updates the County's previous hazard mitigation plan, from 2017.

PREVIOUS HAZARD MITIGATION PLANNING IN ADA COUNTY

Ada County and a group of planning partners prepared an initial hazard mitigation plan that was approved by FEMA in 2006. Federal regulations require updates of hazard mitigation plans on a 5-year cycle to reevaluate recommendations, monitor the impacts of actions that have been accomplished, and determine if there is a need to change the focus of mitigation strategies. A jurisdiction covered by a plan that has expired is no longer in compliance with the federal requirements for hazard mitigation planning.

To meet the federal requirements for updating plans, the 2006 plan was comprehensively updated in 2011. The 2011 update represented a significant enhancement of the 2006 plan in content, scope and coverage. The 2017 updated the 2011 plan. The *2022 Ada County Multi-Hazard Mitigation Plan* updates the 2017 plan.

PLAN UPDATE PROCESS

Updating the plan consisted of the following phases:

- **Organize Resources**—A planning team was assembled for the plan update, consisting of staff from Ada County Emergency Management & Community Resilience (EMCR) and a technical consultant. The team

conducted outreach to establish the planning partnership. A 20-member steering committee was assembled to oversee the plan update, consisting of planning partner staff, residents, and other stakeholders in the planning area. Coordination with other local, state and federal agencies involved in hazard mitigation occurred throughout the plan update process. This phase included a review of the existing plan and existing programs that may support hazard mitigation actions.

- **Engage the Public**—The planning team implemented a public involvement strategy developed by the Steering Committee. The strategy included in-person and virtual public events to present the risk assessment and the draft plan, presentations at various events and to community groups, a hazard mitigation survey, an EMCR-sponsored website, and multiple social media releases accessed by the press and public.
- **Update Goals, Objectives and Actions**—The Steering Committee updated the goals from the 2017 plan and confirmed a set of objectives. The planning partnership selected a range of mitigation actions to work toward achieving the goals set forth in this plan update. Additionally, the Steering Committee selected a set of countywide mitigation actions. The mitigation actions recommended in this plan include some that address limitations in the modeling caused by insufficient data, such as digitizing maps of urban flooding issues and collecting perishable data, such as high water marks, after hazard events.
- **Develop Plan Implementation and Maintenance Strategy**—The Steering Committee developed a plan implementation and maintenance strategy that includes the establishment of a hazard mitigation working group, annual progress reporting, a strategy for continued public involvement, a commitment to plan integration with other relevant plans and programs, and a recommitment from the planning partnership to actively maintain the plan over the five-year performance period.
- **Assemble the Updated Plan**—The planning team and Steering Committee assembled a document to meet hazard mitigation planning requirements for all partners. The updated plan contains two volumes. Volume 1 contains components that apply to all partners and the broader planning area. Volume 2 contains all components that are jurisdiction-specific. Each planning partner has an annex in Volume 2.
- **Plan Adoption**—Once pre-adoption approval was granted by FEMA, the final adoption phase began. Each planning partner then individually adopted the updated plan.
- **Plan Implementation**—Plan implementation will occur over the next five years as the planning partnership begins to implement the county-wide and jurisdiction-specific actions identified in this plan.

RISK ASSESSMENT RESULTS

Risk assessment is the process of measuring the potential loss of life resulting from natural hazards, as well as personal injury and property damage, in order to determine the vulnerability of a community. The Steering Committee used the risk assessment to rate risk and to gauge the potential impacts of each hazard of concern in the planning area. The risk assessment included the following:

- Hazard identification and profiling
- Assessment of the impact of hazards on physical, social, and economic assets
- Identification of particular areas of vulnerability
- Estimates of the cost of potential damage.

Based on the risk assessment, hazards were rated for the risk they pose to the overall planning area. Figure ES-1 shows the resulting scores and ratings for the entire Ada County planning area.

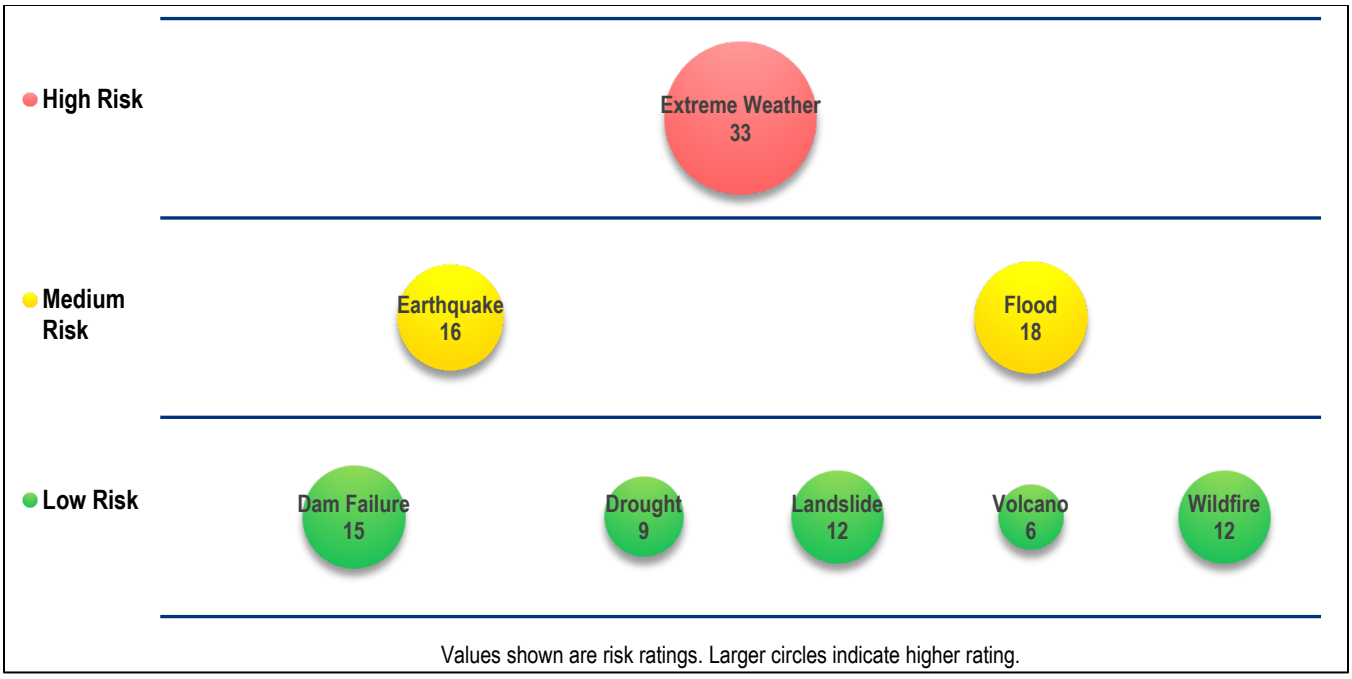


Figure ES-1. Countywide Hazard Risk Rating

Each planning partner also rated hazards for its own area. Figure ES-2 summarizes how the 20 participating planning partners rated each hazard. The results indicate the following general patterns:

- The extreme weather and flood hazards were most commonly ranked as high.
- The dam failure, earthquake, and flood hazards were most commonly ranked as medium.
- The landslide, drought, and volcano hazards were most commonly ranked as low.

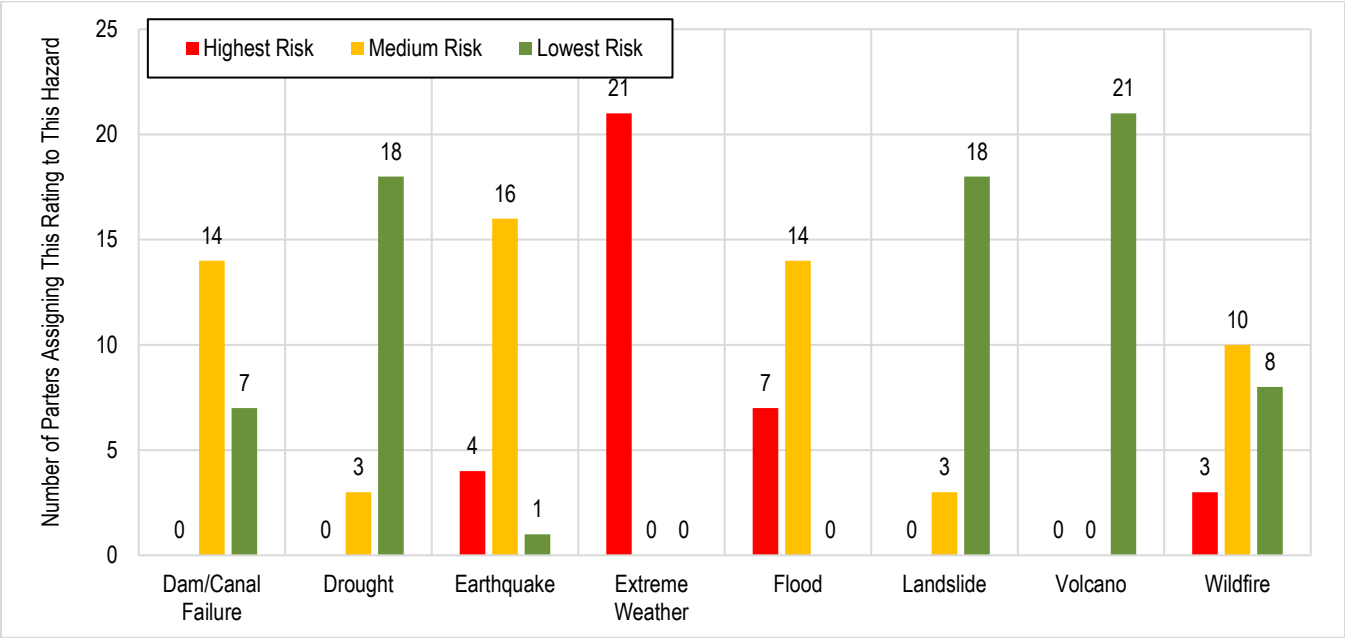


Figure ES-2. Summary of Risk Rating for Individual Planning Partners

MITIGATION MISSION STATEMENT, GOALS AND OBJECTIVES

The following mission statement guided the Steering Committee and the planning partnership in selecting the actions contained in this plan update:

> To reduce the vulnerability to natural hazards in order to protect the health, safety, welfare and economy of the Ada County community.

The Steering Committee and the planning partnership established the following goals for the plan update:

- Protect lives and reduce hazard related injuries
- Minimize or reduce current and future damage from natural hazards to property, including critical facilities and environment
- Encourage the development and implementation of long-term, cost-effective mitigation projects that foster resilience for the whole community
- Maintain, enhance, and restore the natural environment's capacity to deal with the impacts of natural hazard events.
- Improve emergency management preparedness, collaboration, and outreach within the planning area.

The following objectives were identified that meet multiple goals, helping to establish priorities for recommended mitigation actions:

1. Minimize disruption of local government and commerce operations caused by the identified hazards.
2. Using best available data, science, and knowledge, continually improve understanding of the location and potential impacts of the identified hazards.
3. Based on willing participation, encourage retrofit, purchase, or relocation of real property, based on one or more of the following criteria: level of exposure, repetitive loss history, and previous damage from natural hazards.
4. Based on understanding of risk, prevent or discourage new development in hazardous areas; if building occurs in high-risk areas, ensure that it is done in such a way as to minimize risk.
5. Strengthen codes and code enforcement to ensure that new construction and redevelopment of property and infrastructure can withstand the impacts of hazards.
6. Integrate hazard mitigation policies into local government land use plans that not only protect the built environment, but also maintain or enhance the natural environment's ability to withstand and recover from disasters, with an emphasis on the promotion of regional consistency in policy.
7. Develop new, and improve existing, early warning emergency notification protocols, systems, and evacuation procedures.
8. Perform whole community engagement to educate the public on the area's potential hazards and ways to personally prepare, respond, recover and mitigate the impacts of these events.
9. Establish partnerships among all levels of government, the business community, and other stakeholders to improve and implement methods to protect life, property and the natural environment.
10. Increase the resilience and continuity of operations of identified critical facilities and infrastructure within the planning area to maintain delivery of essential services to the whole community.

MITIGATION ACTIONS

Mitigation actions presented in this update are activities designed to reduce or eliminate losses resulting from natural hazards. The update process resulted in the identification of more than 250 mitigation actions for implementation by individual planning partners, as presented in Volume 2 of this plan. In addition, the steering committee and planning partnership identified 15 countywide actions benefiting the whole partnership, as listed in Table ES-1.

Table ES-1. Countywide Mitigation Actions

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Timeline	Objectives
CW-1—Sponsor and maintain a natural-hazard informational website to include the following types of information: • Hazard-specific information such as warning, private property mitigation alternatives, important facts on risk and vulnerability • Pre- and post-disaster information such as notices of grant funding availability • CRS creditable information • Links to planning partners' pages, FEMA and Idaho Office of Emergency Management Natural hazard mitigation plan information such as progress reports, mitigation success stories, update strategies, Steering Committee meetings.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	EMCR Operational Budget	Ongoing	2, 8, 9
CW-2—Maintain the Steering Committee as a functioning body, under the ground rules established at its inception, to monitor progress of the plan, provide technical assistance to planning partners, and oversee the update of the plan according to schedule.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Ongoing	6, 8, 9
CW-3—All planning partners that committed to the update effort will formally adopt this plan when pre-adoption approval has been granted by the Idaho Office of Emergency Management and FEMA Region 10. Each planning partner will adhere to the plan maintenance protocol identified in this plan. All actions under this action will be coordinated by EMCR.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Short-term	All
CW-4—Continue to implement ongoing public outreach programs administered by EMCR. Seek opportunities to promote the mitigation of natural hazards within the planning area, using information contained in this plan.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Ongoing	2, 8, 9
CW-5—Seek out and use the best available data, science and technology to update the risk assessment to this plan as that data, science, technology and funding resources become available.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	FEMA HMGP, RiskMAP, federal hazard analysis funding	Long-term	2, 9
CW-6—Continue to support and coordinate with the Idaho Silver Jackets program.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Ongoing	2, 6, 8, 9
CW-7—Provide technical support and coordination for available grant funding opportunities to the planning partnership.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs, FEMA HMGP	Short-term	2, 9
CW-8—Participate as a cooperating partner with FEMA and other stakeholders in FEMA's RiskMAP initiative.				
Flood	EMCR	Can be funded under existing programs, RiskMAP initiative	Short-term	2, 9
CW-9—Leverage public outreach partnering capabilities within the planning area to promote a uniform and consistent message on the importance of proactive hazard mitigation.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	EMCR Operational Budget	Ongoing	All

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Timeline	Objectives
CW-10—Coordinate mitigation planning and project efforts within the planning area to leverage all resources available to the planning partnership.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	EMCR Operational Budget	Ongoing	1, 9, 10
CW-11—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect them from future damage, with repetitive and severe repetitive loss properties as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits.				
Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Wildfire	Planning Partners	FEMA HMGP, BRIC, FMA	Long-term	3, 9
CW-12—Use information contained in the Ada County Multi-Hazard Mitigation Plan to support updates to other emergency management plans in effect within the planning area.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Short-term	1, 2, 6, 10
CW-13—Using the most current Hazus model and other data available, examine exposure and level of risk to the known hazards of concern for first responder facilities and identified potential sheltering sites.				
Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Long-term	2, 9
CW-14—Based on identified risks, relocate or structurally harden first responder facilities as needed. Relocation may not be an option based on response requirements of the organization.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	FEMA HMGP	Long-term	3, 9
CW-15—Using the most current Hazus model and other data available, categorize potential sheltering sites from lowest to highest exposure to the known hazards of concern. Identify partners that own the sheltering sites and encourage building enhancements at those sites that would allow for operations during a major disaster event.				
Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs, FEMA HMGP	Long-term	2, 9

IMPLEMENTATION

Full implementation of the recommendations of this plan will require time and resources. The measure of the plan's success will be its ability to adapt to changing conditions. Ada County and its planning partners will assume responsibility for adopting the recommendations of this plan and committing resources toward implementation. The framework established by this plan commits all planning partners to pursue actions when the benefits of a project exceed its costs. The planning partnership developed this plan with extensive public input, and public support of the actions identified in this plan will help ensure the plan's success.

Part 1. Planning Process and Community Profile

1. INTRODUCTION

1.1 WHY PREPARE THIS PLAN?

The inevitability of natural hazards in Ada County creates an urgent need to develop strategies, coordinate resources, and increase public awareness to reduce risk and prevent loss from future hazard events. Identifying risks posed by hazards and developing strategies to reduce the impact of a hazard event can assist in protecting life and property of citizens and communities. Local residents and businesses can work together with the County to create a plan that addresses the potential impacts of hazard events and ways to mitigate those impacts.

1.1.1 Federal Guidance

Hazard mitigation is defined as any action taken to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. It involves long- and short-term actions implemented before, during and after disasters. Hazard mitigation activities include planning efforts, policy changes, programs, studies, improvement projects, and other steps to reduce the impacts of hazards.

The federal Disaster Mitigation Act (DMA) emphasizes planning for disasters before they occur. The DMA requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. Regulations developed to fulfill the DMA's requirements are included in Title 44 of the Code of Federal Regulations (44 CFR).

The responsibility for hazard mitigation lies with not only with local, state, and federal governments, but also with private property owners and commercial and institutional interests. The DMA encourages cooperation among state and local authorities in pre-disaster planning. The enhanced planning network called for by the DMA helps local governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more cost-effective risk-reduction projects.

The DMA also promotes sustainability in hazard mitigation. To be sustainable, hazard mitigation needs to incorporate sound management of natural resources and address hazards and mitigation in the largest possible social and economic context.

1.1.2 Local Concerns

The *2022 Ada County Multi-Hazard Mitigation Plan* is the third comprehensive update to Ada County's hazard mitigation plan since its initial development in 2005; previous updates were completed in 2011 and 2017. Several factors initiated Ada County's ongoing efforts to plan for hazard mitigation:

- The Ada County area has significant exposure to numerous natural hazards that have caused millions of dollars in past damage.
- The County and its planning partners want to be proactive in preparing for the impacts of natural hazards.

- Local resources to undertake risk reduction initiatives are limited. Being able to leverage federal financial assistance is paramount to successful hazard mitigation.

Like all previous versions of this plan, the 2022 update was developed by Ada County in partnership with participating municipalities and special purpose districts within the county. One of the benefits of such multi-jurisdictional planning is the ability to pool resources and eliminate redundant activities within a planning area that has uniform risk exposure and vulnerabilities. The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning under its guidance for the DMA. The plan will help guide and coordinate mitigation activities throughout the planning area.

1.1.3 Plan Objectives

The main purpose of this planning effort was to identify risks posed by hazards and to develop strategies to reduce the impact of hazard events on people and property in Ada County; however, the plan was also developed to meet the following objectives:

- Meet or exceed requirements of the DMA.
- Enable all planning partners to continue using federal grant funding to reduce risk through mitigation.
- Meet the needs of each planning partner as well as state and federal requirements.
- Create a risk assessment that focuses on Ada County hazards of concern.
- Create a single planning document that integrates all planning partners into a framework that supports partnerships within the county, and puts all partners on the same planning cycle for future updates.
- Meet the planning requirements of FEMA's Community Rating System (CRS), allowing planning partners that participate in the CRS program to maintain or enhance their CRS classifications.
- Coordinate existing plans and programs so that high-priority actions to mitigate possible disaster impacts are funded and implemented.

1.2 WHO WILL BENEFIT FROM THIS PLAN?

This update identifies resources, information, and strategies for reducing risk from natural hazards. Elements and strategies in the plan were selected because they meet a program requirement and because they best meet the needs of the planning partners and their citizens.

All citizens and businesses of Ada County are the ultimate beneficiaries of this hazard mitigation plan. The plan reduces risk for those who live in, work in, and visit the county. It provides a viable planning framework for all foreseeable natural hazards that may impact the county. Participation in development of the plan by key stakeholders in the county helped ensure that outcomes will be mutually beneficial. The resources and background information in the plan are applicable countywide, and the plan's goals and recommendations can lay groundwork for the development and implementation of local mitigation activities and partnerships.

1.3 HOW TO USE THIS PLAN

This plan has been set up in two volumes so that elements that are jurisdiction-specific can easily be distinguished from those that apply to the whole planning area:

- **Volume 1**—Volume 1 includes all federally required elements of a disaster mitigation plan that apply to the entire planning area. This includes the description of the planning process, public involvement

strategy, goals and objectives, countywide hazard risk assessment, countywide mitigation actions, and a strategy for maintaining and implementing the plan. Appendices provided at the end of Volume 1 include information or explanations to support the main content of the plan.

- **Volume 2**—Volume 2 includes all federally required jurisdiction-specific elements, in annexes for each participating jurisdiction. It includes a description of the participation requirements established by the Steering Committee, as well as instructions and templates that the partners used to complete their annexes. Volume 2 also includes "linkage" procedures for eligible jurisdictions that did not participate in development of this plan but wish to adopt it in the future.

Each planning partner will adopt Volume 1 in its entirety, its own jurisdiction-specific annex in Volume 2, and at least the introduction and appendices to Volume 2. Partners may at their discretion adopt Volume 2 in its entirety.

2. PLAN UPDATE—WHAT HAS CHANGED?

2.1 PREVIOUS PLANS

2.1.1 The 2006 Plan

In 2005, Ada County led a planning effort to prepare the *Ada County All Hazards Mitigation Plan*. Ada County and 10 planning partners adopted that plan in October 2006. It received FEMA approval in November 2006, establishing compliance with the DMA for all participating planning partners. The plan addressed five identified hazards: flood, landslide, earthquake, extreme weather and wildfire.

A principal objective of the planning process was the integration of the National Fire Plan, the Idaho Statewide Implementation Strategy, the Healthy Forests Restoration Act, the Idaho State Hazard Mitigation Plan 2004, the Ada County Comprehensive Plan, and FEMA requirements for a hazard mitigation plan. The effort used the best science from all partners, integrating local and regional knowledge about hazards while meeting the needs of local citizens, the regional economy and the significance of this region to the rest of Idaho and the Inland West.

The plan was published in three volumes: Volume I addressed flood, landslide, earthquake and extreme weather; Volume II addressed wildfire; and Volume III contained appendices. The plan presented 37 strategies to address flood, landslide, earthquake and extreme weather and 44 strategies addressing wildfire mitigation.

2.1.2 The 2011 Plan

Ada County comprehensively revised the original hazard mitigation plan in 2011. This plan differed from its predecessor for a variety of reasons:

- Better guidance existed at the time of its development.
- Science and technology had improved since the development of the initial plan.
- Newly available data and tools provided for a more detailed and accurate risk assessment.
- The risk assessment was prepared to better support future grant applications by providing information to support the measurement of "cost-effectiveness" required under FEMA mitigation grant programs.
- The plan was developed such that it met program requirements of the Community Rating System for participating jurisdictions.
- The participating partners included special purpose districts not involved in the initial planning effort.
- The plan was prepared as a more user-friendly document that is understandable to the general public.
- The plan identified actions rather than strategies. Strategies provide direction, but actions are fundable under grant programs.

The 2011 update, with 22 participating jurisdictions, addressed eight identified hazards: dam or canal failure, drought, volcano (ash fall), flood, landslide, earthquake, extreme weather and wildfire. The plan identified and prioritized 230 actions to be implanted by the planning partnership. The update received FEMA approval on December 22, 2011, maintaining the partners' DMA compliance. The status of recommended actions was monitored by a plan maintenance strategy identified in the plan that included annual progress reporting.

2.1.3 The 2017 Plan

Ada County updated the 2011 plan in 2017 with the following changes:

- Public outreach was enhanced by using social media and a web-based community survey.
- New, updated data provided a more detailed and accurate risk assessment.
- Climate conditions were addressed as a stand-alone chapter describing their impact on the hazards of concern.
- Changes in risk due to new development since the previous plan was adopted were addressed for each hazard of concern.
- The 2017 Plan had 20 planning partners. Boise State University also prepared an annex to the plan as a non-eligible planning partner and contributing stakeholder.

2.1.4 Progress Reporting

The planning partnership for the 2017 plan has completed several progress reports since that plan was completed. For the progress reports, each planning partner reviewed the actions identified for their community and the progress made on each action. Each planning partner also reviewed the priority of each action to determine if that priority needed to be changed due to economic, political, capacity, or disaster related changes within their jurisdiction. All of the completed progress reports for the 2017 plan can be viewed on the Ada County website at: https://adacounty.id.gov/emergencymanagement/mitigation/.

2.2 WHY UPDATE?

2.2.1 Federal Eligibility

Under 44 CFR, hazard mitigation plans must present a schedule for monitoring, evaluating, and updating the plan. This provides an opportunity to reevaluate recommendations, monitor the impacts of completed actions, and determine any need to change the mitigation strategies. Local jurisdictions have a five-year "performance period" from the time they adopt a plan until its expiration. A jurisdiction covered by a plan that has expired is not able to pursue elements of federal funding for which a current hazard mitigation plan is a prerequisite. Hazard mitigation plans that are updated and approved prior to their expiration can maintain continuous funding eligibility.

2.2.2 Changes in Development

Local jurisdictions must revise their hazard mitigation plans to reflect changes in development in order to continue to be eligible for federal mitigation project grant funding (44 CFR Section 201.6(d)(3)). This ensures that the mitigation strategy continues to address the risk and vulnerability of existing and potential development and takes into consideration possible future conditions that could impact vulnerability. The following are significant development and demographic changes in Ada County since the 2017 hazard mitigation plan update:

- According to the 2020 U.S. Census, the reported population for Ada County was 494,399—a 13.8 percent increase from the population reported in the 2017 Plan.
- The valuation of the general building stock increased by 31.84 percent (Ada County Assessor, 2022)
- The total number of structures within the planning area increased by 16.2 percent, as detailed in Table 2-1.

Table 2-1. Percent Increase in General Building Stock

Municipality	Building County 2017 Plan	Building Count 2022 Plan	% Change
Boise	76,610	81,552	+6.1
Eagle	8,668	12,437	+30.3
Garden City	4,104	4,385	+6.4
Kuna	5,425	8,831	+38.6
Meridian	29,852	40,812	+26.9
Star	2,770	5,065	+45.3
Unincorporated County	19,019	21,720	+12.4
Total	**146,448**	**174,802**	**+16.2**

These number represent significant growth over five years. This plan update assumes that some of this new development occurred in hazard-prone areas. Because all such new development would have been regulated pursuant to local programs and codes, it is assumed that vulnerability did not increase even if exposure did. Ada County and its incorporated cities and towns have general/comprehensive plans that govern land-use decisions and policymaking, as well as building codes and flood-management regulations based on state and federal mandates. More detailed information on the types and location of new construction over the last five years is available in the city and county annexes in Volume 2 of this plan.

2.2.3 Emergency Management Accreditation Program

For the 2022 update, Ada County is pursuing accreditation under the Emergency Management Accreditation Program (EMAP). EMAP sets voluntary standards, assessments, and accreditation processes for disaster preparedness programs throughout the country.

2.3 THE UPDATED PLAN—WHAT IS DIFFERENT?

Due to the success of the prior plan update, no major changes were made to the format and function for this update. The plan has been enhanced using the best recently available data and technology, especially in the risk assessment portion. This plan update followed the same basic planning process as was used for the previous effort. A Steering Committee was once again the critical planning component in the process. Table 2-2 indicates the major changes between the two plans as they relate to 44 CFR planning requirements.

Table 2-2. Plan Changes Crosswalk

44 CFR Requirement	2017 Plan	Updated Plan
Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: **1. An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;** **2. An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and** **3. Review and incorporation, if appropriate, of existing plans, studies, reports and technical information.**	The 2017 plan followed an outreach strategy utilizing multiple media developed and approved by the Steering Committee. This strategy involved: • Public participation on an oversight Steering Committee. • Establishment of a plan informational website. • Press releases. • Utilization of social media • Web deployed survey Use of a public information survey Stakeholders were identified and coordinated with throughout the process. A comprehensive review of relevant plans and programs was performed by the planning team.	Public engagement enhancements for the 2022 plan included: • Web deployed survey • Enhanced social media coverage As with the 2017 plan, the 2022 planning process identified key stakeholders and coordinated with them throughout the process. A comprehensive review of relevant plans and programs was performed by the core planning team.
§201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.	The 2017 plan included a comprehensive risk assessment of eight hazards of concern. Risk was defined as (probability x impact), where impact is the impact on people, property and economy of the planning area. All planning partners ranked risk as it pertains to their jurisdiction. The potential impacts of climate conditions are discussed for each hazard.	The 2022 plan update assessed the same natural hazards of concern as the 2017 plan and applied the same risk ranking protocol. To meet EMAP criteria, expanded profiles were developed for the following non-natural hazards: • Civil disturbance and terrorism • Cyber disruption • Hazardous materials release • Public health emergency/pandemic • Radiological event • Utility failure
§201.6(c)(2)(i): [The risk assessment shall include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.	The 2017 plan presented a risk assessment of each hazard of concern. Each chapter included the following components: • Hazard profile, including maps of extent and location, historical occurrences, frequency, severity and warning time. • Secondary hazards • Exposure of people, property, critical facilities and environment • Vulnerability of people, property, critical facilities and environment. • Future trends in development • Scenarios • issues	The 2022 plan update applied the same methodology to describe the extent and location of the natural hazards assessed by the plan.

44 CFR Requirement	2017 Plan	Updated Plan
§201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i). This description shall include an overall summary of each hazard and its impact on the community	Vulnerability was assessed for all hazards of concern. The Hazus computer model was used for the dam failure, earthquake and flood hazards. These were Level 2 analyses using city and county data. Site-specific data on County-identified critical facilities were entered into the Hazus model. Hazus outputs were generated for other hazards by applying an estimated damage function to an asset inventory extracted from Hazus.	The 2022 plan assessed vulnerability to all natural hazards using Hazus, updated with the best available data for the planning area. Hazus was used to model impacts from the dam failure, earthquake and flood hazards. Similar outputs were generated for the non-Hazus hazards using the same qualitative methodologies as used for the 2017 plan.
§201.6(c)(2)(ii): [The risk assessment] must also address National Flood Insurance Program insured structures that have been repetitively damaged floods	During the 2017 plan update there were no repetitive loss properties identified in the Ada County planning area. However, a comprehensive flood insurance analysis that looks at policy coverage and claims history was performed as part of the flood hazard risk assessment.	There was an expansion in this plan to address repetitive loss properties that have now been identified by FEMA in the Ada County planning area.
Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard area.	A complete inventory of the numbers and types of buildings exposed was generated for each hazard of concern. The Steering Committee defined "critical facilities" for the planning area, and these were inventoried by exposure. Each hazard chapter provides a discussion on future development trends.	The 2022 plan includes a complete inventory of the numbers and types of buildings exposed for each hazard of concern. The Steering Committee defined "critical facilities" for the planning area, and these were inventoried by exposure. Each hazard chapter provides a discussion on future development trends.
Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) and a description of the methodology used to prepare the estimate.	Loss estimates were generated for all hazards of concern. These were generated by Hazus for the dam failure, earthquake and flood hazards. For the other hazards, loss estimates were generated by applying a regionally relevant damage function to the exposed inventory. In all cases, a damage function was applied to an asset inventory. The asset inventory was the same for all hazards and was generated in Hazus.	As was done with the 2017 plan, the 2022 plan includes loss estimates for all hazards of concern. These were generated by Hazus for the dam failure, earthquake and flood hazards. For the other hazards, loss estimates were generated by applying a regionally relevant damage function to the exposed inventory. The asset inventory was the same for all hazards and was generated in Hazus.
Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.	There is a discussion of future development trends as they pertain to each hazard of concern. This discussion looks predominantly at the existing land use and the current regulatory environment that dictates this land use.	The 2022 plan describes future development trends as they pertain to each hazard of concern. This discussion looks predominantly at existing land use and the current regulatory environment that dictates this land use.

44 CFR Requirement	2017 Plan	Updated Plan
§201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.	The 2017 plan contained a mission statement, goals, objectives and actions. The mission statement, goals and objectives were regional and covered all planning partners. Each planning partner used the progress reporting from the plan maintenance and evaluated the status of actions identified in the 2011 plan. Actions that were completed or no longer considered to be feasible were removed. The balance of the actions were carried over to the 2017 plan and in some cases, new actions were added to the action plan. All objectives met multiple goals and stand alone as components of the plan. Each planning partner completed an assessment of its regulatory, technical and financial capabilities.	The 2022 plan includes a mission statement, goals, objectives, and actions. The mission statement, goals and objectives are regional and cover all planning partners. The Steering Committee made slight revisions to these components from the previous plan to better align with objectives for this update. Each planning partner used the progress reporting from the plan maintenance and evaluated the status of actions identified in the 2011 plan. Actions that were completed or no longer considered to be feasible were removed. The balance of the actions was carried over to the 2017 plan and in some cases, new actions were added to the action plan. Actions were prioritized using the same protocol that was applied for the 2017 plan.
Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.	The Steering Committee identified a mission statement, five goals and ten objectives. These were completely new goals and objectives targeted specifically for this hazard mitigation plan. They were not carried over from any other planning document and were identified based upon the capabilities of the planning partnership. These planning components supported the actions identified in the plan.	The Steering Committee identified a mission statement, five goals and 10 objectives. These were slightly enhanced and targeted specifically for this hazard mitigation plan. These planning components support the actions identified in the plan.
Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.	The 2017 plan includes a hazard mitigation catalog that was developed through a facilitated process. This catalog identifies actions that manipulate the hazard, reduce exposure to the hazard, reduce vulnerability, or increase mitigation capability. The catalog further segregates actions by scale of implementation. A table in the action plan section analyzes each action by mitigation type to illustrate the range of actions selected.	The same mitigation catalog approach that was utilized with the 2017 plan was applied to the 2022 plan update.
Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program, and continued compliance with the program's requirements, as appropriate.	All municipal planning partners that participate in the National Flood Insurance Program identified an action stating their commitment to maintain compliance and good standing under the program. Communities that participate in the Community Rating System have identified actions to maintain or enhance their standing under the CRS.	All municipal planning partners that participate in the National Flood Insurance Program identified an action stating their commitment to maintain compliance and good standing under the program. Communities that participate in the Community Rating System have identified actions to maintain or enhance their standing under the CRS.

44 CFR Requirement	2017 Plan	Updated Plan
Requirement: §201.6(c)(3)(iii): [The mitigation strategy shall describe] how the actions identified in section (c)(3)(ii) will be prioritized, implemented and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.	Each recommended action was prioritized using a qualitative methodology based on the objectives the project will meet, the timeline for completion, how the project will be funded, the impact of the project, the benefits of the project and the costs of the project.	The same prioritization protocol that was utilized for the 2017 plan was applied to the 2022 plan update.
Requirement §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.	The 2017 plan details a plan maintenance strategy similar to that of the initial plan. There is additional detail addressing deficiencies observed during the initial performance period of the plan. This includes a more defined role for the Steering Committee in annual plan review.	The 2017 plan maintenance strategy was carried over to the 2022 plan update.
Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.	The 2017 plan details recommendations for incorporating the plan into other planning mechanisms such as: • Comprehensive Plan • Emergency response plan • Capital Improvement Programs • Municipal Code • Continuity of Operations Plan	The 2017 plan maintenance strategy was carried over to the 2022 plan update.
Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.	The 2017 plan details a strategy for continuing public involvement	The 2017 plan maintenance strategy was carried over to the 2022 plan update.
Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).	The 2017 plan achieved DMA compliance for 21 planning partners. Resolutions for each partner adopting the plan are included in an Appendix.	The 2022 plan achieved DMA compliance for 21 planning partners. Resolutions for each partner adopting the plan are included in an appendix.

3. PLAN DEVELOPMENT METHODOLOGY

3.1 FUNDING

This planning effort was funded by a grant from FEMA's Emergency Management Performance Grant program. Ada County Emergency Management & Community Resilience (EMCR) was the applicant agent for the grant. The grant was applied for in 2020, and funding was appropriated in 2021.

3.2 FORMATION OF THE PLANNING TEAM

Ada County hired Tetra Tech, Inc. to assist with development and implementation of the plan update. The Tetra Tech project manager assumed the role of the lead planner, reporting directly to a County-designated project manager. A planning team was formed to lead the planning effort, made up of the following members:

- Joe Lombardo (EMCR)—Director
- Paul Marusich (EMCR)—Deputy Director, County Project Manager
- Rob Flaner (Tetra Tech)—Project Manager, Lead Project Planner
- Carol Baumann (Tetra Tech)—Lead Risk Assessor
- Megan Brotherton (Tetra Tech)—Planner
- Desmian Alexander (Tetra Tech)—Planner

3.3 ESTABLISHMENT OF THE PLANNING PARTNERSHIP

Ada County opened this planning effort to all eligible local governments in the county. At a kickoff meeting on June 24, 2021, a presentation was made to introduce the plan update and solicit planning partner commitment. Each jurisdiction wishing to participate was asked to provide a "letter of intent" that designated a point of contact for the jurisdiction and confirmed the jurisdiction's commitment to the process and understanding of expectations. Table 3-1 lists planning partners that provided a letter of intent to participate in the plan update process.

3.4 DEFINING THE PLANNING AREA

The planning area consists of all of Ada County plus the portion of Flood Control District #10 that extends into Canyon County, as shown in Figure 3-1. The portion of Flood Control District #10 outside of Ada County is included in the planning area so that this plan fully covers the district. However, risk assessments in this plan apply only to the area within the Ada County boundaries because the flood control district has no critical facilities and no jurisdiction over development within its boundaries.

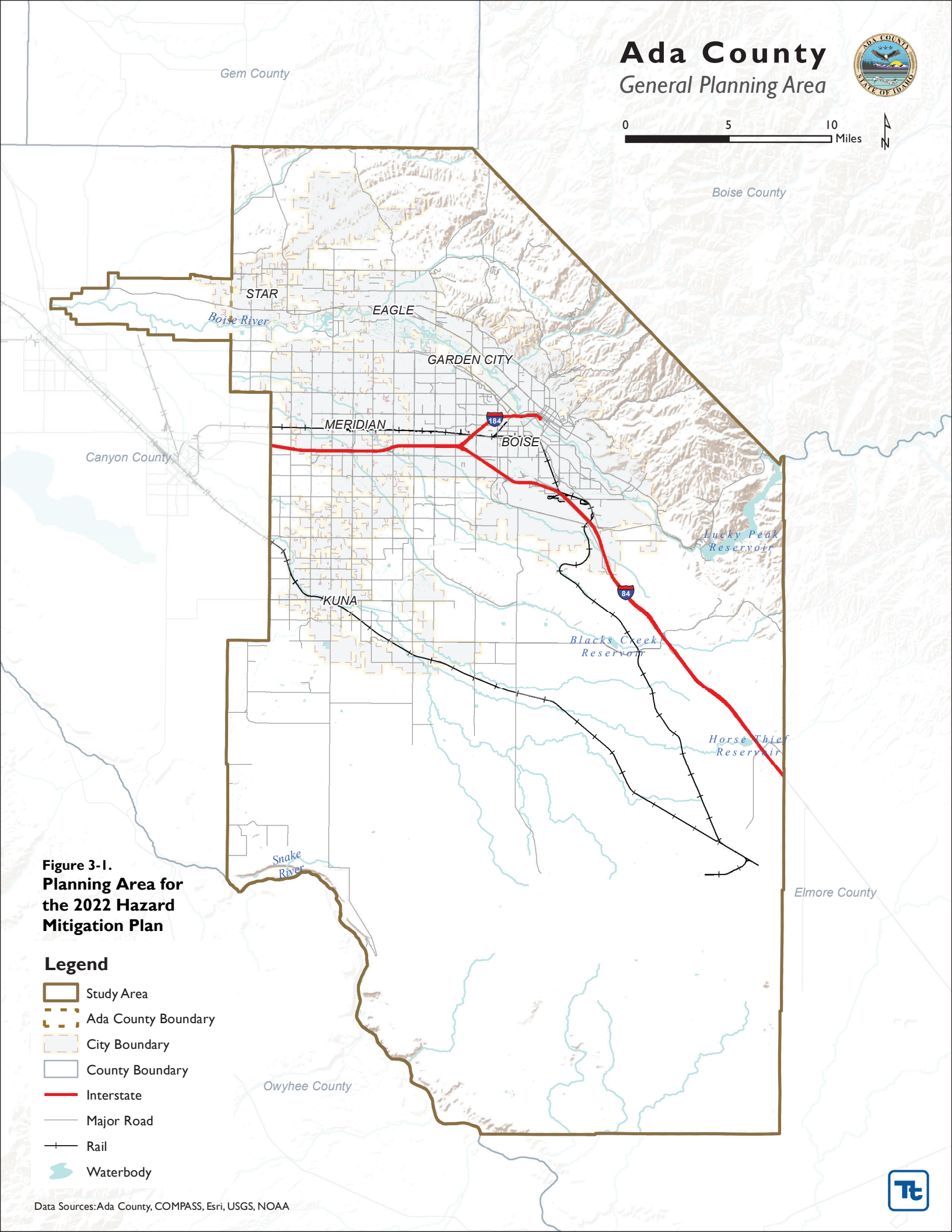


Figure 3-1.
Planning Area for the 2022 Hazard Mitigation Plan

Table 3-1. Planning Partners

Jurisdiction	Point of Contact	
	Name	Title
Cities/County		
Ada County	Paul Marusich	Deputy Director Ada County EMCR
City of Boise	Mallory Wilson	Emergency Manager
City of Eagle	Michael Williams	Floodplain Administrator/Planner III
City of Garden City	John Evans	Mayor
City of Kuna	Mike Borzick	GIS Manager
City of Meridian	Jason Korn	Environmental Programs Coordinator
City of Star	Jacob Qualls	City Clerk/Treasurer
Special Purpose Districts		
Ada County Highway District	Lloyd Carnegie	Maintenance Manager
Eagle Fire District	Tyler Lewis	Fire Chief
Eagle Sewer District	Neil Jenkins	General Manager
Eagle Urban Renewal Agency	Ashley Squyres	Administrator
Flood Control District #10	Mike Dimmick	District Manager
Greater Boise Auditorium District	Pat Rice	Executive Director
Independent School District of Boise	Bill McKitrick	Safety and Security Supervisor
Joint School District #2	Spencer McLean	Administrator Buildings and Grounds
Kuna Rural Fire Protection District	T.J. Lawrence	Fire Chief
Meridian Development Corporation	Ashley Squyres	Administrator
North Ada Co. Fire and Rescue	Shelley Young	Fire District Administrator
Star Joint Fire Protection District	Greg Timinsky	Fire Chief
Star Sewer District	Ryan V. Morgan	District Engineer
Whitney Fire Protection District	Renn Ross	Fire Chief

3.5 THE STEERING COMMITTEE

Hazard mitigation planning enhances collaboration and support among diverse parties whose interests can be affected by hazard losses. A steering committee was formed to oversee all phases of the plan update. The members of this committee included key planning partner staff, citizens and other stakeholders from within the planning area. The planning team assembled a list of candidates representing interests within the planning area that could have recommendations for the plan or be impacted by its recommendations. Table 3-2 lists the committee members.

Leadership roles and ground rules were established during the Steering Committee's initial meeting on July 6, 2021. The Steering Committee agreed to meet monthly as needed throughout the course of the plan's development. The planning team facilitated each Steering Committee meeting, which addressed a set of objectives based on the work plan established for the update. The Steering Committee met five times from July 2021 through March 2022. All Steering Committee meetings were open to the public, and agendas and meeting notes were posted to the hazard mitigation plan website, https://adacounty.id.gov/emergencymanagement/mitigation/. All open public meeting laws and policies were adhered to during the facilitation of these steering committee meetings.

Table 3-2. Steering Committee Members

Representing Jurisdiction/Agency	Primary Contact	Title	Alternate
Ada Co. Community Development	Zach Kirk	County Engineer	
Ada County Committee PIO	Elizabeth Duncan	Communications Manager	
Ada County EMCR	Paul "Crash" Marusich	Deputy Director	Joe Lombardo
Ada County Highway District	Lloyd Carnegie	Maintenance Manager	Dale Kuperus
Ada Fire-Adapted Communities	Jerry McAdams	Wildfire Mitigation Coordinator, Boise Fire Department	
Boise State University	Ben Wells	Assistant Director, Emergency Management	Barbara Beagles
City of Boise (Boise Fire/Emergency Management)	Mallory Wilson	Emergency Manager	Romeo Gervais, Jim Pardy
City of Eagle	Mike Williams	Floodplain Administrator/Planner III	Steve Noyes
City of Garden City	Jenah Thornborrow	Development Services Director	Colin Schmidt
City of Meridian	Jason Korn	Environmental Programs Coordinator	Joanna Hopson
Community Planning Association of Southwest Idaho (COMPASS)	Lila Klopfenstein	Assistant Planner	Hunter Mulhall
Fire Districts	Scott Buck	Deputy Chief/Fire Marshal, Eagle Fire Protection District	
Flood Control District #10	Mike Dimmick	District Manager	
General Public	Phil Bandy	Public Citizen	
Idaho Office of Emergency Management	Lorrie Pahl	Mitigation Planner	Susan Cleverley
Idaho Power	Marci Anderson	VP, Corporate Services and Communications	Chris Davidson
Land Trust of the Treasure Valley	Eric Grace	Executive Director	
Micron	Kelly Armstrong	Emergency Services Program Coordinator/EMT	Kelly Terashima
U.S. Army Corps of Engineers	Brandon Hobbs	Project Manager/Idaho Outreach Coordinator	
Water District 63	Mike Meyers	Watermaster	Rex Barrie

Due to the ongoing COVID-19 pandemic, the Steering Committee met virtually throughout the course of the plan's development, and all meetings were open to the public on line. Protocols for handling public comments were established in the ground rules developed by the Steering Committee.

3.6 COORDINATION WITH OTHER AGENCIES

44 CFR requires that opportunities for involvement in the planning be provided to neighboring communities, agencies involved in hazard mitigation, agencies that regulate development, businesses, academia and other private interests (Section 201.6.b.2). The initial coordination activity was an invitation to agencies to provide representatives to participate on the Steering Committee. As the plan update process proceeded, the following agencies were invited to participate and were kept apprised of plan development milestones:

- Idaho Office of Emergency Management
- Idaho Department of Water Resources (IDWR)
- Idaho Department of Lands
- Idaho Rivers United
- Boise River Enhancement Network
- Ada County Irrigation Districts
- Community Planning Association of Southwest Idaho (COMPASS)

- Idaho Silver Jackets
- National Weather Service
- U.S. Army Corps of Engineers
- U.S. Bureau of Land Management.

These agencies received meeting announcements, meeting agendas, and meeting minutes by e-mail throughout the plan update process. They supported the effort by attending meetings or providing feedback on issues. All were provided an opportunity to comment on this plan update, primarily through the hazard mitigation plan website. Each was sent an e-mail message informing them that draft portions of the plan were available for review.

The complete draft plan was sent to FEMA Region X, the Idaho Office of Emergency Management, Idaho Department of Lands and the Insurance Service Office for a pre-adoption review to ensure program compliance.

3.7 REVIEW OF EXISTING PROGRAMS

44 CFR states that hazard mitigation planning must include review and incorporation, if appropriate, of existing plans, studies, reports and technical information (Section 201.6.b(3)). Chapter 5 of this plan provides a review of laws and ordinances in effect within the planning area that can affect hazard mitigation actions. In addition, the following programs can affect mitigation within the planning area:

- Ada County Comprehensive Plan (2019 update)
- The comprehensive plans for each of the incorporated city planning partners
- Idaho State Hazard Mitigation Plan (2018)
- The Ada County Hazard Inventory and Vulnerability Analysis (2010)
- Ada County Threat/Hazard Identification and Risk Assessment (2018)
- The Ada County Emergency Operations Plan (2018)
- Ada County Flood Response Plan (2018)
- Ada County Wildfire Response Plan (May 2018)
- Boise River Enhancement Plan (2015)

An assessment of all planning partners' regulatory, technical and financial capabilities to implement hazard mitigation actions is presented in the individual jurisdiction-specific annexes in Volume 2. Many of these relevant plans, studies and regulations are cited in the capability assessments.

3.8 PUBLIC INVOLVEMENT

Broad public participation in the planning process helps ensure that diverse points of view about the planning area's needs are considered and addressed. The public must have opportunities to comment on disaster mitigation plans during the drafting stages and prior to plan approval (44 CFR, Section 201.6(b)(1)). The Community Rating System expands on these requirements by making CRS credits available for optional public involvement activities. The strategy for involving the public in this plan update emphasized the following elements:

- Include members of the public on the Steering Committee
- Use a questionnaire to determine if the public's perception of risk and support of hazard mitigation has changed since the initial planning process
- Utilize social media tools to expand messaging
- Utilize/leverage existing public outreach efforts implemented by EMCR
- Attempt to reach as many planning area citizens as possible using multiple media
- Identify and involve planning area stakeholders
- Engage the Local Emergency Planning Committee, which has a diverse membership from the public and private sectors

3.8.1 Stakeholders and the Steering Committee

Stakeholders are the individuals, agencies and jurisdictions that have a vested interest in the recommendations of the hazard mitigation plan, including planning partners. All planning partners are stakeholders in the process. The diversity brought to the table by special purpose districts and private non-profit entities creates an opportunity to leverage partnerships between entities that typically do not work together in the field of hazard mitigation.

The effort to include stakeholders in this plan update included stakeholder participation on the Steering Committee. All members of the Steering Committee live or work within the planning area. Two members of the committee represented Ada County citizens and property owner interests or represented public special interest groups (Land Trust of the Treasure Valley and Phil Bandy). Two members represented private sector interests. Boise State University provided a representative to the committee to represent the academic interests of this planning effort, and Water District # 63 represented irrigation district interest.

3.8.2 Hazard Mitigation Survey

Building upon the successful survey effort of the 2017 plan, the Steering Committee decided to deploy a survey again for the 2022 planning effort. The decision to survey was driven by the principal objective of gaining more responses from all portions of the County. A hazard mitigation survey (see Figure 3-2) developed by the planning team, with guidance from the Steering Committee, was used to gauge household preparedness for natural hazards and the level of knowledge of tools and techniques that assist in reducing risk and loss from natural hazards.

This questionnaire was designed to help identify areas vulnerable to one or more natural hazards. Responses helped guide the Steering Committee in selecting goals, objectives and mitigation strategies. A web-based survey tool was used to develop and track the results of the survey. The survey was disseminated by electronic means, principally via the hazard mitigation plan website as well as social media (Facebook, Twitter, Next-Door). The survey and the website were advertised via multiple means during the survey period.

The survey was conducted from October 28, 2021, through April 30, 2022. More than 3,500 surveys were completed, covering all geographic locations in the County. This response was much greater than the 2,300 surveys received for the 2017 planning effort. This success is attributed to the power of social media tools such as Facebook, Twitter and Nextdoor. The survey questionnaire and a summary of results are in Appendix A.

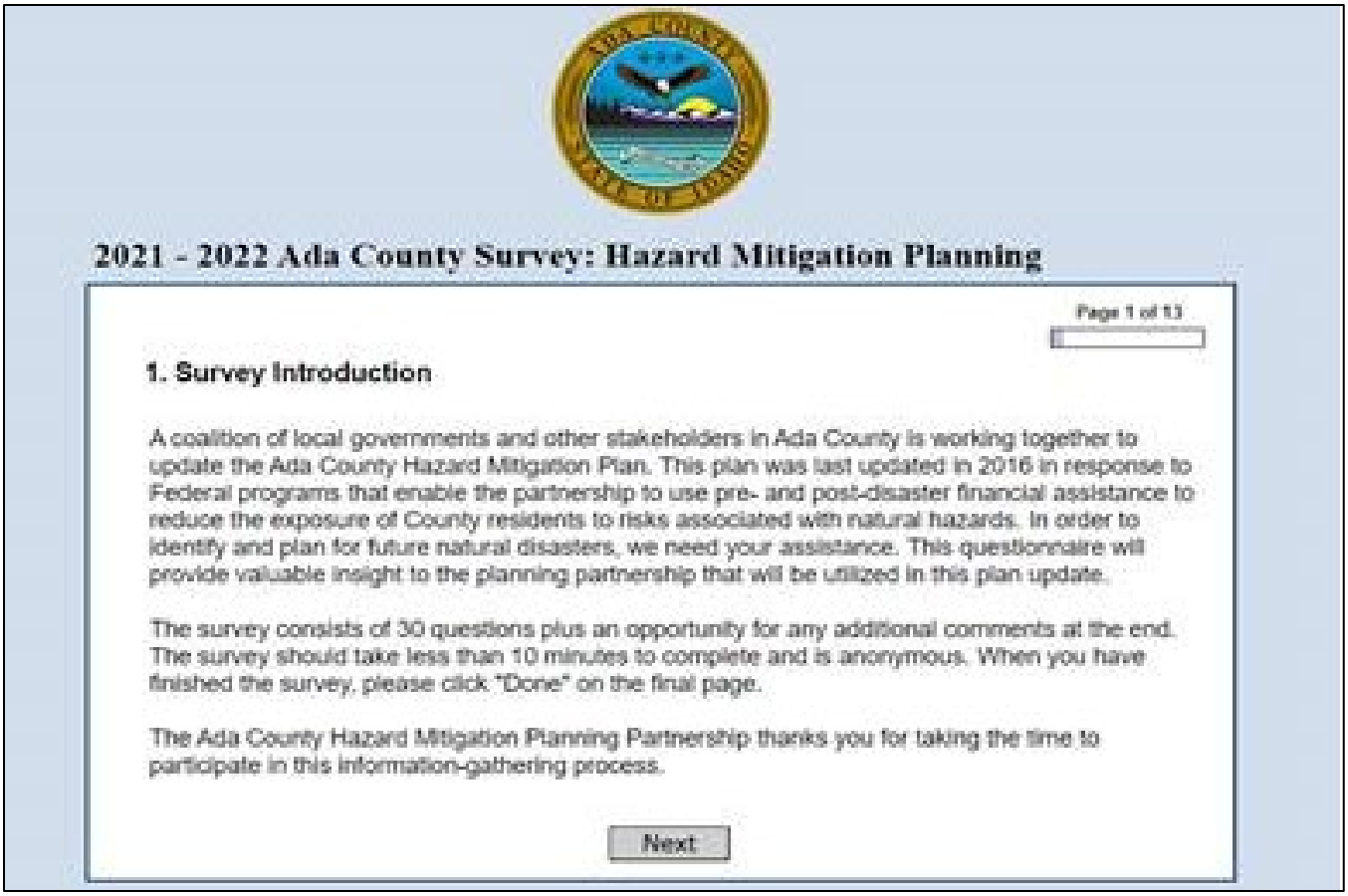


Figure 3-2. Sample Page from the Public Survey

The planning team reviewed the findings from the surveys received and provided the following feedback to the Steering Committee:

- Surveys were received from all six incorporated cities as well as unincorporated areas of the County.
- 46 percent of respondents noted that they are very concerned or extremely concerned about drought, followed by air quality (43 percent), climate change (39 percent), disease/epidemic (31 percent), and wildfire (30 percent).
- 73 percent of respondents have experienced a pandemic, followed by severe weather (60 percent), earthquake (52 percent), and drought (40 percent).
- 76 percent of respondents indicated that hazard information is effectively provided through the internet, followed by social media and TV news (both 61 percent), smart phone (58 percent), and radio (56 percent).
- More than half of the respondents support restrictions on land use in known high hazard areas.
- The concept of incentives to promote hazard mitigation actions on a personal scale was strongly supported, with 57 percent supporting an insurance premium discount and 53 percent supporting a rebate program to encourage them to spend money to retrofit their homes.
- 84 percent of respondents do not have flood insurance coverage; 82 percent do not have earthquake insurance.

3.8.3 Public Meetings and Events

With support of the Steering Committee, EMCR coordinated virtual and in-person public outreach events to educate the public on the hazards of concern and mitigation activities taking place around the community. The sections below summarize the public meetings and events.

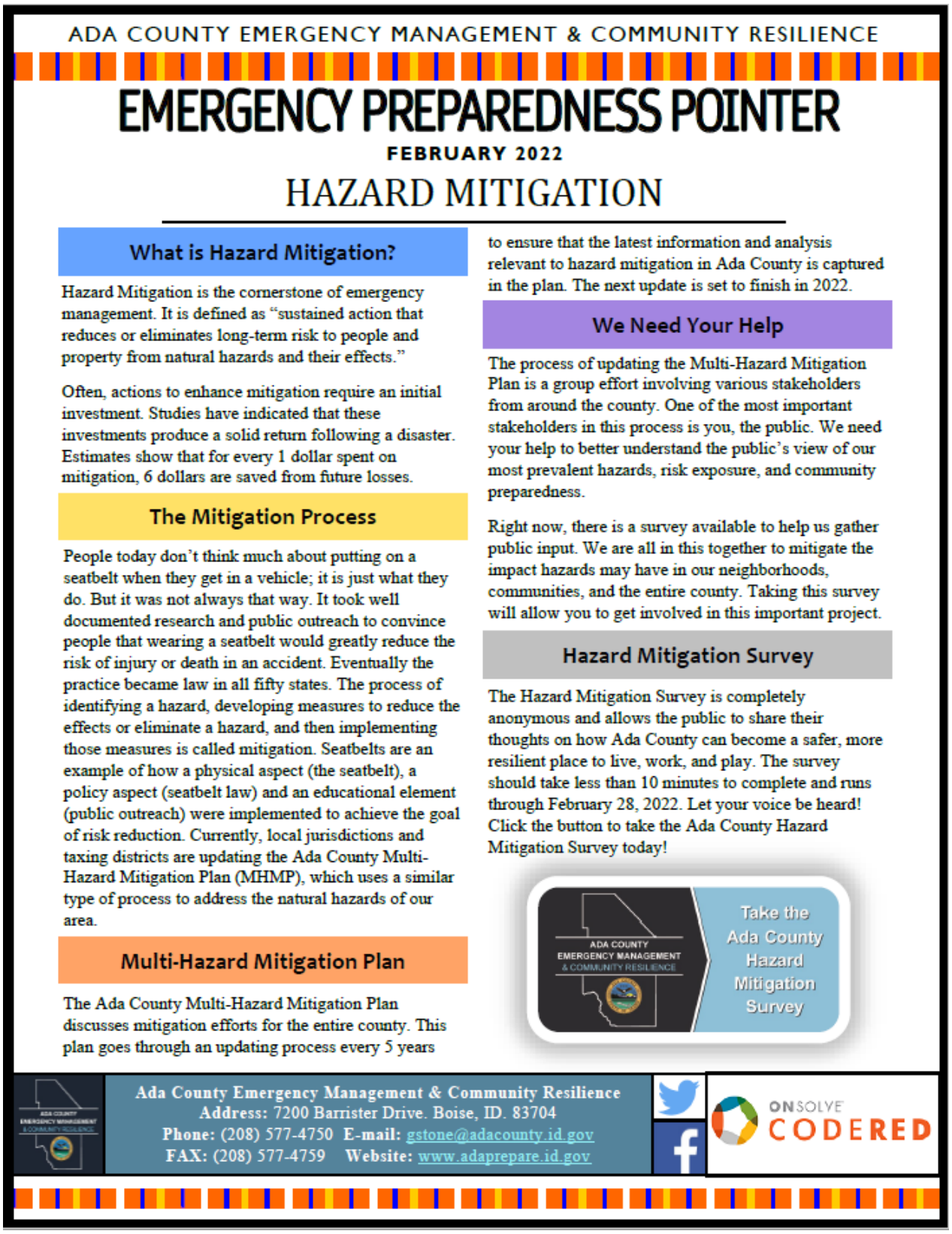
On May 16 and 20 a mitigation outreach was held at Micron, coordinated by the Steering Committee and staffed by EMCR and Tetra Tech. Micron is one of the largest private employers in the area and offered a tremendous opportunity to reach the public. The event promoted emergency preparedness and the hazard mitigation plan update. The booth included a computer station that allowed people to view the hazard mapping results for their residence. Many members of the public stopped by, with 161 contacts made directly by staff over the two-day event. Available handouts included *Emergency Preparedness Pointer* (Figure 3-3) which was originally released in February encouraging public survey participation, *Family Emergency Preparedness* (72-hour kits, household communication/evacuation planning, pet preparedness etc.), and the *Hazards Affecting Ada County*.

The draft plan was made available for public comment during a publicized two-week period in July and August 2022. The public comment period gave the public an opportunity to comment on the draft plan prior to its submittal to the Idaho Office of Emergency Management and FEMA. One comment was received, concerning the length of the comment period: “deadline [is] too short for thorough review.” Near the end of the public comment period, a virtual public meeting was held for the draft plan presentation.

3.8.4 Social Media Coverage

Regular contact was made with the press and public through social media over the course of the plan’s development. Publicity and social media posts included the following:

- August 13, 2021—Initial press release on Facebook, Twitter, Nextdoor, and the EMCR and Ada County websites promoting the plan update and the public Steering Committee Meeting
- December 1, 2021—Ada County EMCR Tweet public survey promotion
- December 8, 2021—Ada County EMCR Tweet public survey promotion
- January 12, 2022—Ada County EMCR Tweet public survey promotion (see Figure 3-4)
- January 14, 2022—Ada County EMCR Tweet public survey promotion
- February 1, 2022—Ada County EMCR Tweet public survey promotion
- February 1, 2022—Emergency Preparedness Pointer distribution on Facebook, Twitter, Nextdoor, and the EMCR website
- April 20, 2022—City of Boise Nextdoor public survey promotion
- July 21, 2022—Ada County EMCR website notification of the public comment period and virtual public meeting
- July 2022—Ada County EMCR press release for the Idaho Statesman newspaper promoting the public comment period and virtual public meeting



ADA COUNTY EMERGENCY MANAGEMENT & COMMUNITY RESILIENCE

EMERGENCY PREPAREDNESS POINTER

FEBRUARY 2022

HAZARD MITIGATION

What is Hazard Mitigation?

Hazard Mitigation is the cornerstone of emergency management. It is defined as "sustained action that reduces or eliminates long-term risk to people and property from natural hazards and their effects."

Often, actions to enhance mitigation require an initial investment. Studies have indicated that these investments produce a solid return following a disaster. Estimates show that for every 1 dollar spent on mitigation, 6 dollars are saved from future losses.

The Mitigation Process

People today don't think much about putting on a seatbelt when they get in a vehicle; it is just what they do. But it was not always that way. It took well documented research and public outreach to convince people that wearing a seatbelt would greatly reduce the risk of injury or death in an accident. Eventually the practice became law in all fifty states. The process of identifying a hazard, developing measures to reduce the effects or eliminate a hazard, and then implementing those measures is called mitigation. Seatbelts are an example of how a physical aspect (the seatbelt), a policy aspect (seatbelt law) and an educational element (public outreach) were implemented to achieve the goal of risk reduction. Currently, local jurisdictions and taxing districts are updating the Ada County Multi-Hazard Mitigation Plan (MHMP), which uses a similar type of process to address the natural hazards of our area.

Multi-Hazard Mitigation Plan

The Ada County Multi-Hazard Mitigation Plan discusses mitigation efforts for the entire county. This plan goes through an updating process every 5 years to ensure that the latest information and analysis relevant to hazard mitigation in Ada County is captured in the plan. The next update is set to finish in 2022.

We Need Your Help

The process of updating the Multi-Hazard Mitigation Plan is a group effort involving various stakeholders from around the county. One of the most important stakeholders in this process is you, the public. We need your help to better understand the public's view of our most prevalent hazards, risk exposure, and community preparedness.

Right now, there is a survey available to help us gather public input. We are all in this together to mitigate the impact hazards may have in our neighborhoods, communities, and the entire county. Taking this survey will allow you to get involved in this important project.

Hazard Mitigation Survey

The Hazard Mitigation Survey is completely anonymous and allows the public to share their thoughts on how Ada County can become a safer, more resilient place to live, work, and play. The survey should take less than 10 minutes to complete and runs through February 28, 2022. Let your voice be heard! Click the button to take the Ada County Hazard Mitigation Survey today!

Ada County Emergency Management & Community Resilience
Address: 7200 Barrister Drive. Boise, ID. 83704
Phone: (208) 577-4750 **E-mail:** gstone@adacounty.id.gov
FAX: (208) 577-4759 **Website:** www.adaprepare.id.gov

ONSOLVE CODERED

Figure 3-3. Public Outreach Handout

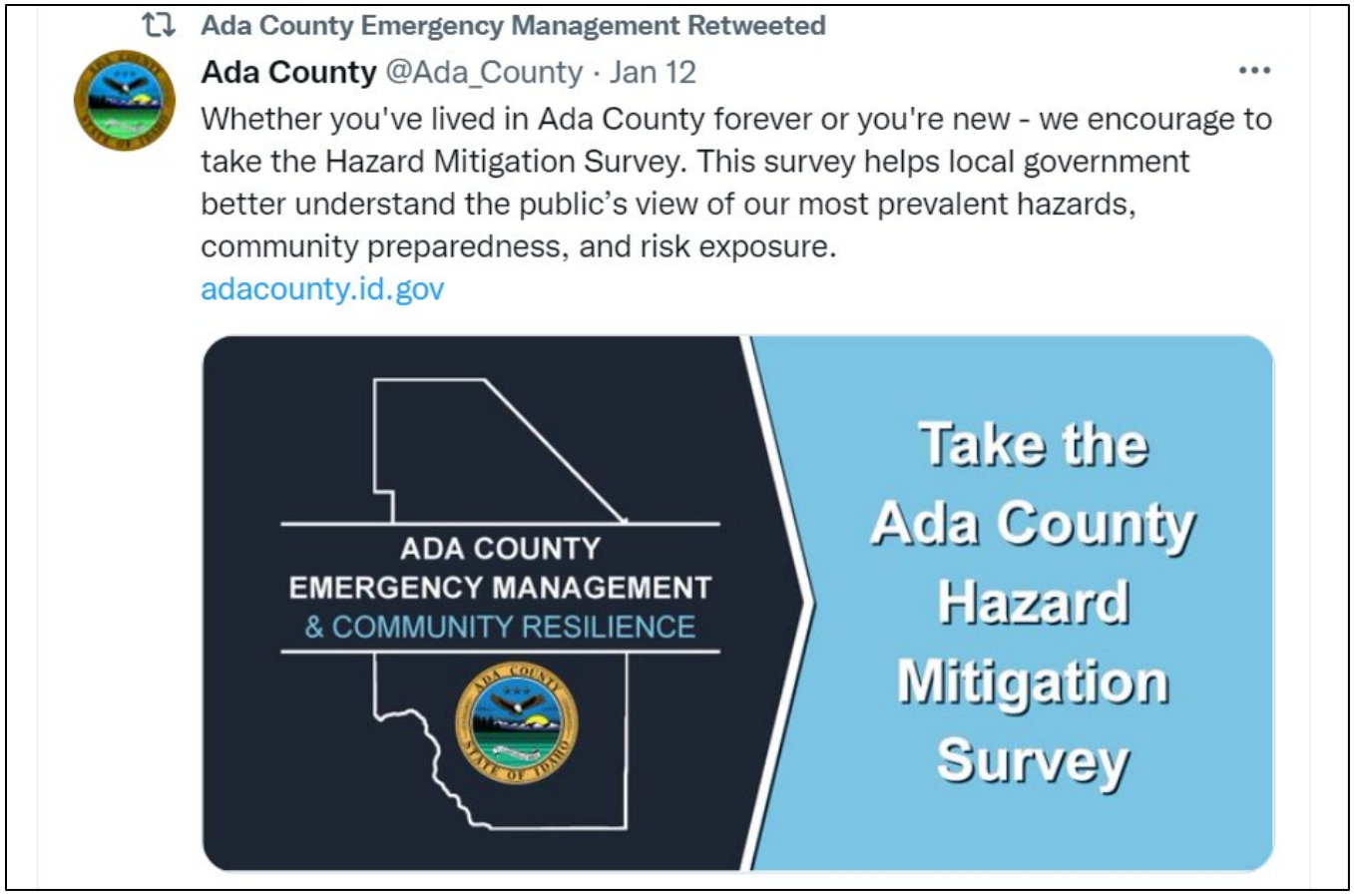


Figure 3-4. January 12, 2022, EMCR Tweet

3.8.5 Internet

The EMCR hazard mitigation webpage was utilized as the primary means for public access to all phases of this plan update process. This website has been maintained by EMCR during each plan update and is a robust data source for all aspects of emergency management in the Ada County planning area (see Figure 3-5):

https://adacounty.id.gov/emergencymanagement/mitigation/

The site's address was publicized in all press releases, mailings, questionnaires and public meetings. Information on the plan update process, the Steering Committee, the questionnaire and phased drafts of the plan was made available to the public on the site throughout the process. EMCR will continue to maintain this website as part of its overall public outreach program during the performance period for this plan update.

3.9 PLAN DEVELOPMENT CHRONOLOGY/MILESTONES

Table 3-3 summarizes important milestones in the development of the plan update.

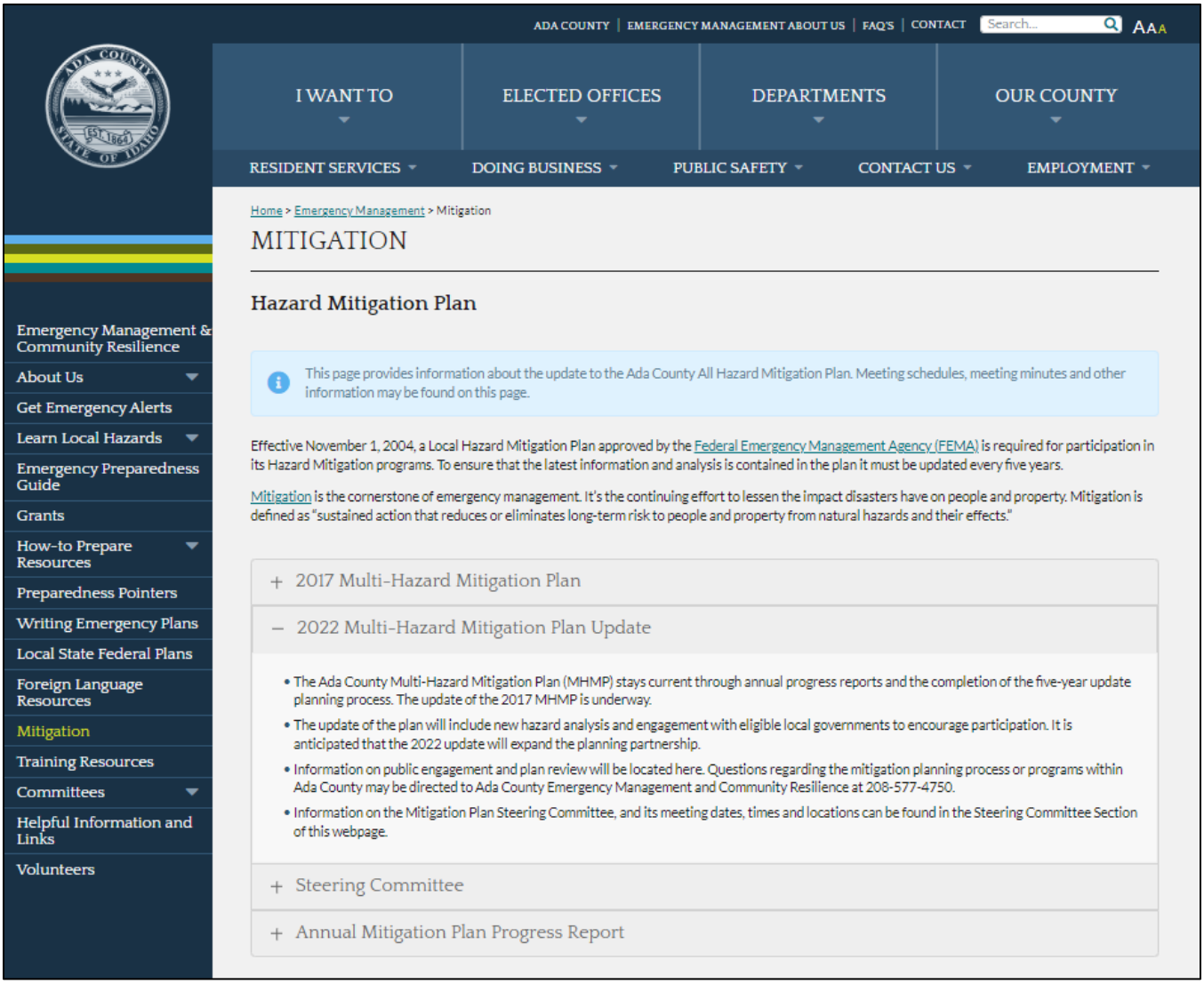


Figure 3-5. Sample Page from Multi-Hazard Mitigation Plan Web Site

Table 3-3. Plan Development Milestones

Date	Event	Description	Attendance
2021			
5/5	County procures Tetra Tech to facilitate plan update	• Facilitation contractor secured	N/A
5/14	Core Planning team identified	• Formation of the planning team	N/A
6/16	Steering Committee	• Steering Committee membership confirmed	N/A
6/24	Planning Partner Kickoff meeting (Virtual)	• The Planning Team • The Disaster Mitigation Act • FEMA requirements for Natural Hazard Mitigation Plan update • Our work plan to complete the update • Steering Committee • Planning Partner expectations	22

Date	Event	Description	Attendance
7/6	Steering Committee Meeting #1	• Review purposes for update • Organize Steering Committee • Plan review • EMAP overview • Hazards of concern review • Public outreach strategy • Jurisdictional Annex overview	12
8/13	Public Outreach	• Contact with press and public through social media outlets announcing the plan update process	N/A
8/17	Steering Committee Meeting #2	• Assess data needs • Goal setting • Public involvement strategy	34
9/21	Steering Committee Meeting #3	• Phase 1 jurisdictional annex update, Phase 2 deployment date • Review/approve mission, goals and objectives • Finalize critical facilities definition • Public involvement strategy	22
10/19	Steering Committee Meeting #4	• Phase 2 jurisdictional annex update • Risk assessment update • Public involvement strategy • Core capability exercise • Upcoming grant opportunity	21
10/28	Public Outreach	• Hazard mitigation survey deployed	3,537
2022			
3/15	Steering Committee Meeting #5	• Risk assessment and repetitive loss properties update • Plan review observations • Plan maintenance strategy • Confirm countywide initiatives	18
4/1	Public Outreach	• Hazard mitigation survey closed	3,537
5/16	Public Outreach	• Hazard mitigation outreach event at Micron	60
5/20	Public Outreach	• Hazard mitigation outreach event at Micron	101
7/19	Steering Committee Meeting #6	• Public involvement strategy • Draft plan review	16
7/22	Public Outreach	• Initiation of final public comment period	N/A
8/4	Public Outreach	• Public draft presentation	5
8/5	Public Outreach	• Closure of the final public comment period	N/A
8/16	Steering Committee Meeting #7	• Review public comments	20
8/22	Plan Submittal	• Submittal of draft plan to Idaho Office of Emergency Management	N/A
11/9	Plan Approval	• Approval pending adoption provided by FEMA	N/A
11/10	Adoption	• Adoption window of final plan opens	N/A

4. ADA COUNTY PROFILE

4.1 GEOGRAPHIC OVERVIEW

Ada County covers 1,060 square miles in southwestern Idaho's Treasure Valley. It is bounded on the north by Gem and Boise Counties, on the east by Elmore County, on the south by Owyhee County and on the west by Canyon County. Ada County is the most populous county Idaho. It has six incorporated cities:

- Boise, the county seat and state capital, is the most populous city in Ada County and the region. Boise serves as a retail and business center as well as the cultural and entertainment hub of the region.
- Meridian, the County's second largest city and the fastest growing city in the state, was established in 1891 and incorporated in 1903. Most of its residential neighborhoods are new, due to fast population growth in the last 20 years.
- Eagle, a bedroom community of Boise, is situated between the Boise Foothills and the Boise River. Eagle maintains its rural charm with open space, parks and access to the Boise River Greenbelt System.
- Garden City owes much of its early existence to gambling. Today, the small village adjacent to Boise has since capitalized on the rediscovery of the river and the natural environment.
- Kuna is a community rooted in agriculture in the southwestern portion of Ada County.
- Star is Ada County's smallest and newest incorporated city, though it was one of the earliest communities developed in the Boise River Valley. Varied growth and development rates over time have resulted in the un-incorporation and re-incorporation of this rural community.

The cities lie within the broad mountain valley and are close to Interstate 84, the primary transportation route through southern Idaho. Each is expected to grow with the regional development of the Treasure Valley.

4.2 HISTORICAL OVERVIEW

The Shoshone-Bannock tribe moved into the region between 4,000 and 5,000 years ago as hunters following large game migrating to the north. The Shoshone tribes were organized as a collection of extended families referred to as a band. Having occupied the Great Basin for centuries, the Shoshone were skilled at living in inhospitable arid deserts. Southern Idaho offered food resources across a vast region and at varying elevations. In the 1700s, Shoshone bands acquired horses, which expanded their trading opportunities with other tribes. Shoshone trade routes became trail routes used by migrants during the American westward movement of the mid-19th century.

The fur trade brought white settlers into Southern Idaho in the early 1800s. British fur traders were the first European explorers in the Boise Valley. In 1834, the British established Old Fort Boise at the mouth of the Boise River, but they abandoned it after two decades. Gold was discovered in 1862 in the Boise Basin, resulting in the establishment of small gold rush settlements and boom towns.

Though early encounters between natives and explorers were amiable, encroachment, settlement and cultural conflict irrevocably changed the native way of life. By the end of the 19th century, much of the Shoshone population had been forced onto reservations or had succumbed to diseases introduced by explorers and settlers.

Over the years, Boise became an important crossroads and trading center. Miners traveled through town on their way to mining settlements and many others traveling the Old Oregon Trail found the crossing at Boise River to be easier than other river crossings. The arrival of stagecoach and freight lines made the Boise area a regional transportation hub. With growing population and political influence, Boise incorporated in 1864. The territorial capital was relocated from Lewiston to Boise in the mid-1860s. The U.S. Army built Fort Boise in 1863, on what is now the northeastern part of Boise.

Ada County was formed December 22, 1864, with Boise as the county seat. The County was named after Ada Riggs, the first child born to Pioneer H.C. Riggs, a co-founder of the city of Boise. Soon after the formation of the County, population and industry began to grow, particularly around Boise. Boise developed as a key government center and the federal, state and local offices located there enhanced the County's ability to grow and prosper.

Timber was an important industry in Ada County at the turn of the 20th century. The first sawmill was established on the Boise River just east of Boise in 1905 by the Barber Lumber Company. A wooden dam was constructed across the river to provide a holding pond for logs and an electrical plant. A few other mills followed on the river and other tributaries in the County.

Ada County's economic base shifted to agriculture in the 1900s. The Boise Project resulted in the irrigation and cultivation of the formerly arid, sagebrush plains of central Ada County. Some of the first farms in the County were established along the low-lying floodplains of the Boise River and early irrigation systems were constructed around Garden City, Eagle Island, Dry Creek and Star. Post-war development included the construction of Anderson Ranch Dam to increase irrigation capabilities, produce power and reduce flooding in the valley.

As communities were platted and developed, streetcars and light rail trolley systems connected the towns of Star, Middleton, Kuna, Nampa, Boise, Eagle and Caldwell. The rail lines provided a means for local transportation and to ship freight and produce beyond the region. Invention of the car and construction of state and federal highways marked the end of the trolley system in Ada County by the 1920s.

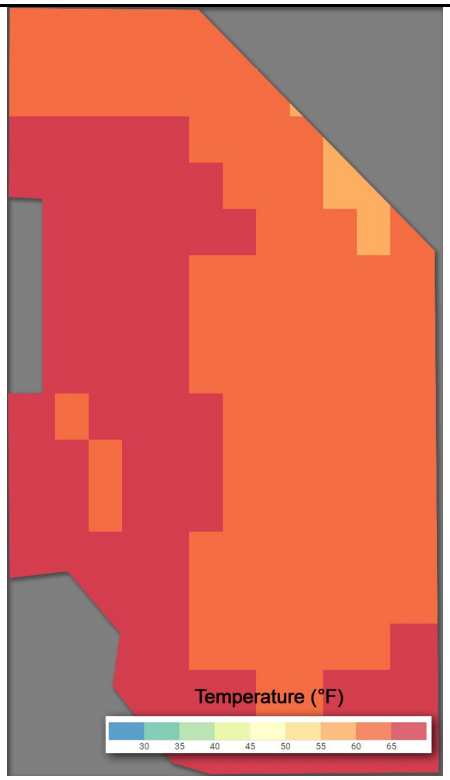
The J. R. Simplot Company agricultural processing business was founded in 1929 near the small agricultural community of Declo. The first Albertson's grocery store opened in Boise in 1939. Today, Albertson's and Simplot remain among the county's largest employers.

4.3 PHYSICAL SETTING

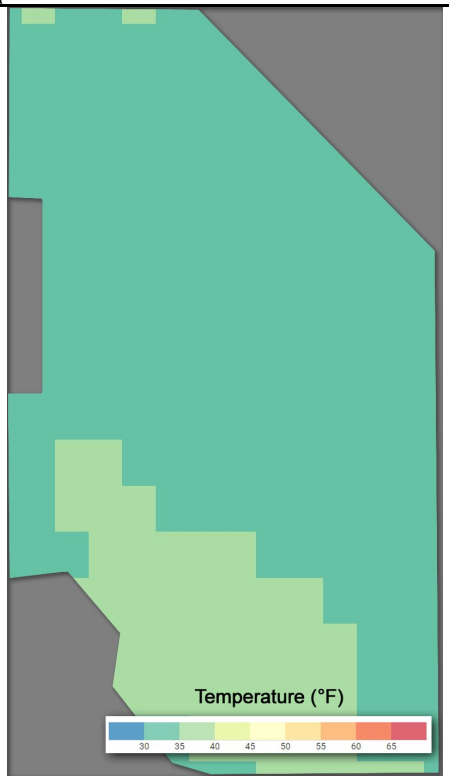
4.3.1 Climate

Ada County has a four-season climate with generally mild temperatures. Average daily temperatures reach the 70s in July and August and fall to about freezing in December and January. Precipitation is heaviest during winter and spring and drops off in summer. On average, Boise receives about 12 inches of precipitation annually, including about 18 inches of snowfall a year. Figure 4-1 shows the countywide distribution of average temperatures and precipitation for 1991 through 2020. Figure 4-2 shows the monthly average temperatures and precipitation at the Boise Air Terminal for 1991 through 2020.

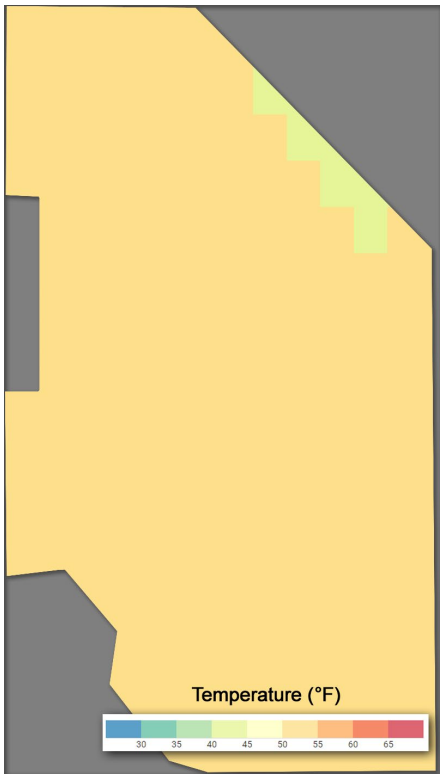
Source: (National Centers for Environmental Information n.d.)



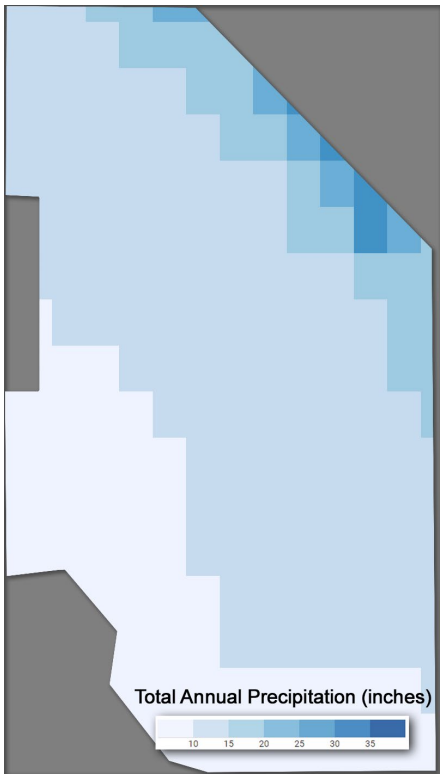
Normal Maximum Temperature (Annual Average)



Normal Minimum Temperature (Annual Average)



Normal Average Temperature (Annual Average)



Normal Precipitation (Annual Total)

Figure 4-1. 1991 – 2020 Normal Annual Temperatures and Precipitation Countywide

Source: (National Centers for Environmental Information n.d.)

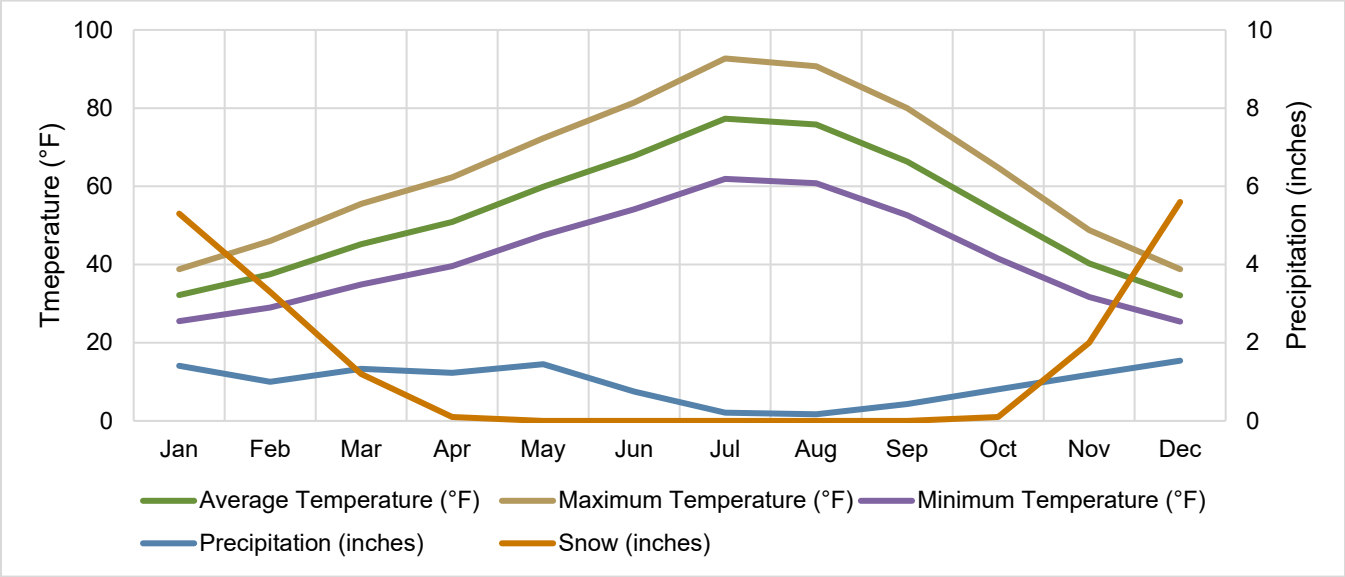


Figure 4-2. 1991 – 2020 Normal Monthly Temperatures and Precipitation for Boise Air Terminal

4.3.2 Hydrology

Treasure Valley, formerly known as the Lower Snake River Valley or the Boise River Valley, is a broad basin where the Payette, Boise, Weiser, Malheur and Owyhee Rivers drain into the Snake River. The Boise River is an important contributor to Ada County's quality of life, identity and economy. The Snake River, Ada County's largest river, meanders through the southern portion of the county, forming part of the county's boundary. These rivers, their impoundments, and their tributaries provide boating, fishing, bird watching and other water recreation activities. The major rivers and creeks, along with their tributary streams, gulches, canals and drainages, have contributed to local development but have also been the source of many flood events in Ada County.

The largest river in Ada County is the Snake River, which passes through the southern portion of the County. The Boise River, a tributary of the Snake River with headwaters in the mountains east and northeast of the County, is important to the County's quality of life, identity and economy. It is the county's primary source of irrigation water and a major source of drinking water. It also offers numerous recreational opportunities as well as important wildlife habitat. A system of dams and canals connected to the Boise River provides flood control for the majority of the Treasure Valley and irrigates 354,000 acres of lands in Ada County and other parts of the Treasure Valley.

Ada County's water supply comes from surface water, deep aquifers and shallow groundwater. The Treasure Valley Hydrologic Project indicates that the deep aquifers and shallow groundwater are separated from each other by clay zones that prevent the shallow water from recharging the deep aquifer in many, but not all, areas. Irrigation and canals are a major source of shallow groundwater recharge. The Treasure Valley Hydrologic Project estimates that 1 million acre-feet of water flows out of the Treasure Valley basin every year.

The depth to groundwater varies from 2 feet below surface level in western Ada County to 300 feet or more in the southern and eastern parts of the county. This, plus the area's relatively permeable soils, raises concerns about contamination of the Boise aquifer. The aquifer can be protected through the use of central sewage facilities, rather than individual septic systems, and best management practices for stormwater management.

4.3.3 Terrain

Ada County features streams, mountain ranges, extensive foothills and open space. Much of the county's landscape is dry grassland or sagebrush, with a few pockets of timbered land. Terrain ranges from 5,750 feet above sea level at the northern mountains to about 2,200 feet along the southern floodplains. This southern portion of the County is largely undeveloped as much of the land belongs to the federal government. The long time agricultural valley is bounded to the northwest by the foothills of the Boise Front.

4.3.4 Geology

Ada County's terrain consists of a series of northwest trending mountains and valleys formed by thousands of years of tectonic plate movement, all part of the western Snake River Plain. On the south are extensive Quaternary gravel deposits that overlie Quaternary basalt. Recent cinder cones line the Snake River near Swan Falls. On the northeast is the Cretaceous Idaho batholith, home to Bogus Basin ski area. The batholith is a mountainous area that forms the northeast margin of the western Snake River Plain.

In the Boise foothills is a complex assemblage of sandstones and lake beds formed within or on the edges of Lake Idaho in the last 10 million years. Table rock sandstone, quarried since the mid-1800s, belongs to these strata. The City of Boise lies in the alluvial valley of the Boise River. The broad, flat valley floor sharply contrasts with the bold mountains and dissected foothills that are typical of most of southwest Idaho's terrain.

4.3.5 Soils

Soils at higher elevations in the northeastern part of the county are sloping to very steep, moderately deep and very deep, and well-drained. They are used mainly as rangeland and wildlife habitat and for recreation. Slope, inaccessibility and depth to rock are the main limitations to engineering uses.

Soils on lacustrine foothills above the Boise River are nearly level to very steep and well-drained to excessively drained. Erosion and sedimentation hazards are limitations to the use of these soils because of the fragile vegetative cover and the highly erosive nature of the soils. Flash flooding in major drainage ways during summer cloudbursts increases the potential for debris flows.

The soils in the central and southern parts of Ada County are on alluvial terraces, basalt plains and alluvial fans. The natural vegetation is predominantly sagebrush and bunchgrass. These soils are shallow to very deep; and they are somewhat poorly drained, well-drained, and somewhat excessively drained. They are used mainly for farming and as rangeland and wildlife habitat. A significant acreage is used for urban development. The gentle slopes in these areas generally have significant erosion potential, even when vegetation is removed by wildfire. Where excessively drained soils exist on sloped areas, erosion potential is somewhat higher. However, this combination is only found occasionally in the southern portion of the county.

4.4 DEVELOPMENT

4.4.1 Land Ownership and Use

According to Ada County's Comprehensive Plan, 48 percent of the land in the County is privately owned, 2 percent is held by local government, 7 percent belongs to state government, and 43 percent is owned by the federal government, primarily the Bureau of Land Management (BLM).

A key element in risk assessment is to look at land use in hazard areas that have a delineated extent (dam failure, flood, landslide and wildfire). For example, an agricultural, low-density use of the floodplain is a lower risk use than a high density, residential use. Figure 4-3 shows Ada County land use taken from the County's most recent comprehensive plan (Ada County 2019).

4.4.2 Building Count, Occupancy Class and Estimated Replacement Value

Table 4-1 presents planning area building counts by building occupancy class. Table 4-2 summarizes estimated replacement value for building structures and contents combined.

Table 4-1. Planning Area Building Counts by Occupancy Class

	Number of Buildings							
	Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Total
City of Boise	76,386	4,824	27	35	165	71	44	**81,552**
City of Eagle	11,810	601	1	2	8	11	4	**12,437**
City of Garden City	3,664	705	0	4	6	4	2	**4,385**
City of Kuna	8,663	145	0	1	13	5	4	**8,831**
City of Meridian	39,226	1,463	8	15	62	14	24	**40,812**
City of Star	4,957	97	0	1	8	2	0	**5,065**
Unincorporated	21,506	162	7	10	28	5	2	**21,720**
Total	**166,212**	**7,997**	**43**	**68**	**290**	**112**	**80**	**174,802**

Table 4-2. Estimated Replacement Value of Planning Area Buildings

Jurisdiction	Estimated Total Replacement Value (Structure and Contents)
City of Boise	$61,280,836,767
City of Eagle	$9,838,649,929
City of Garden City	$3,705,101,875
City of Kuna	$3,886,826,099
City of Meridian	$28,959,315,273
City of Star	$2,845,160,473
Unincorporated	$12,472,792,807
Total	**$122,988,683,223**

4.4.3 Critical Facilities

Critical facilities are those that are essential to the health and welfare of the population. These become especially important after any hazard event. Also included are facilities that hold or carry significant amounts of hazardous materials with a potential to impact public health and welfare during a hazard event. The risk assessment for each hazard in this plan discusses that hazard's potential impact on critical facilities. Through a facilitated exercise, the Steering Committee crafted the following definition of "critical facilities" for this plan:

> *A critical facility is one that is deemed vital to the Ada County planning area's ability to provide essential services while protecting life and property. A critical facility may be a system or an asset, either physical or virtual, the loss of which would have a profound impact on the security, economy, public health or safety, environment, or any combination of thereof, across the planning area.*

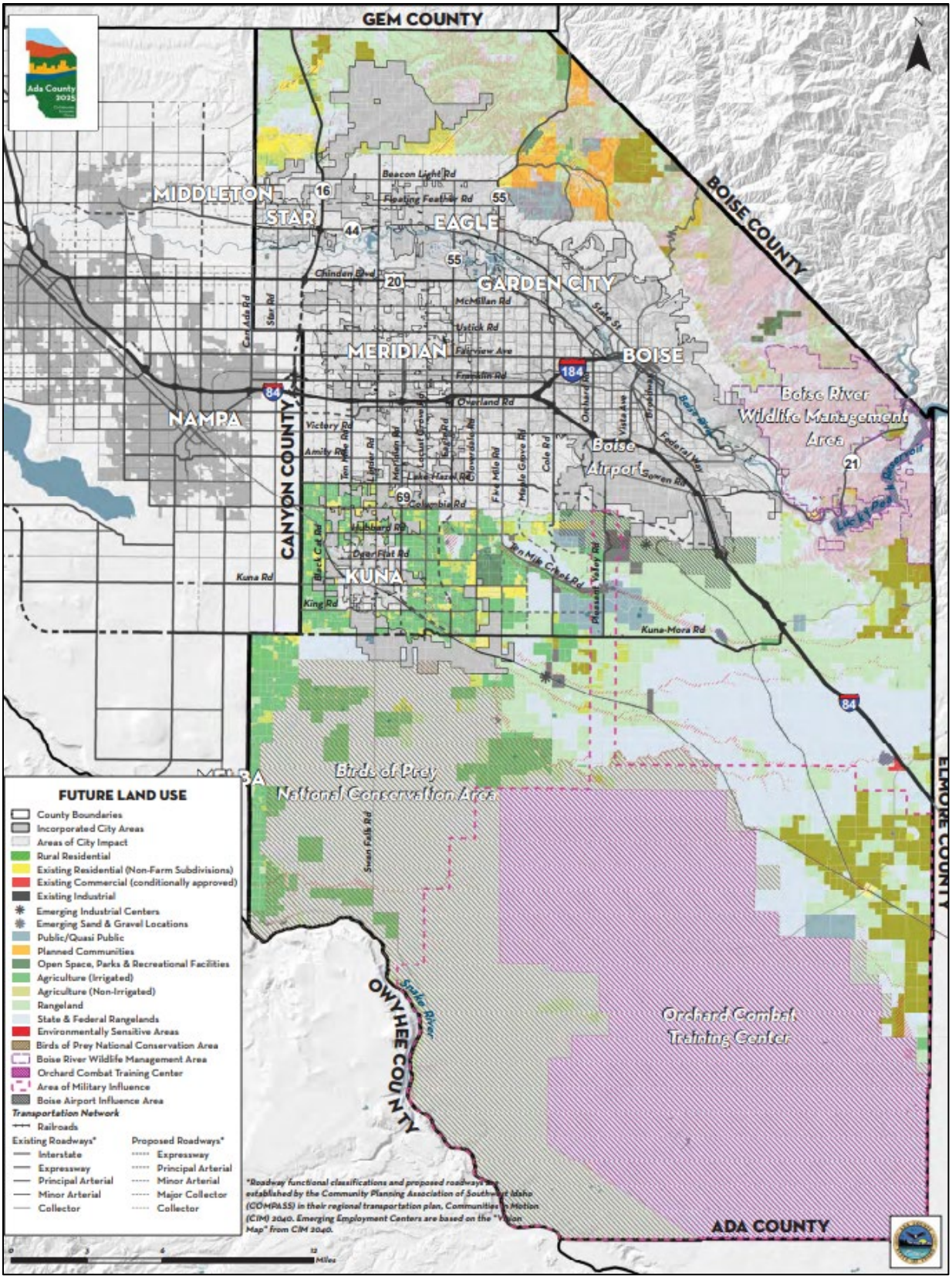


Figure 4-3. Future Ada County Land Use

For some hazards, potential damage to critical facilities was estimated using FEMA's Hazus computer model. For this reason, the list of critical facilities was categorized using categories that are defined in the Hazus model:

- **Safety and Security**—Law Enforcement/Security, Search and Rescue, Fire Services, Government Service, Responder Safety, and Imminent Hazard Mitigation
- **Food, Water and Sheltering**—Evacuations, Schools, Food/Potable Water, Shelter, Durable Goods, Water Infrastructure, and Agriculture
- **Health and Medical**—Medical Care/Hospitals: Patient Movement, Public Health, Fatality Management, Health Care, and Supply Chain
- **Energy**—Power (Grid), Temporary Power and Fuel
- **Communications**—Infrastructure, Alerts, Warnings, Messages, 911 and Dispatch, Responder Communications and Financial Services
- **Transportation**—Highway/Roadway, Mass Transit, Railway, Aviation, Maritime and Pipeline
- **Hazardous Materials**—Facilities, Hazardous Debris, Pollutants and Contaminants

Table 4-3 summarizes the number of critical facilities by Hazus-defined category, based on the best data available on critical facilities at the time of this plan update. The County and its planning partners consider this information to be subject to change as new information about critical facilities becomes available during the performance period for this plan. Due to the sensitivity of this information, a detailed list of facilities is not provided. The location of critical facilities in unincorporated areas of the county is shown on Figure 4-4 and Figure 4-5.

Table 4-3. Planning Area Critical Facilities

	Number of Facilities							
	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
City of Boise	194	37	187	30	66	263	239	**1,016**
City of Eagle	14	2	34	1	5	17	39	**112**
City of Garden City	71	0	19	4	4	6	10	**114**
City of Kuna	9	4	14	0	4	17	22	**70**
City of Meridian	45	7	38	6	29	53	100	**278**
City of Star	2	0	8	0	1	8	25	**44**
Unincorporated	103	31	118	4	6	25	201	**488**
Total	**438**	**81**	**418**	**45**	**115**	**389**	**636**	**2,122**

4.4.4 Development Trends

Ada County continues to experience rapid growth. Land use in the planning area will continue to be directed by comprehensive plans adopted under Idaho's land use regulation law. The County and each city have adopted comprehensive plans that govern land use and policy making for their jurisdictions. This hazard mitigation plan will work together with these programs to support wise land use in the future by providing vital information on the risk associated with natural hazards in Ada County. All municipal planning partners have included actions in their action plans to consider incorporating the Ada County Multi-Hazard Mitigation Plan into their comprehensive plans by reference. This would ensure that all future trends in development could include the benefits of the information on risk and vulnerability to natural hazards identified in this plan.

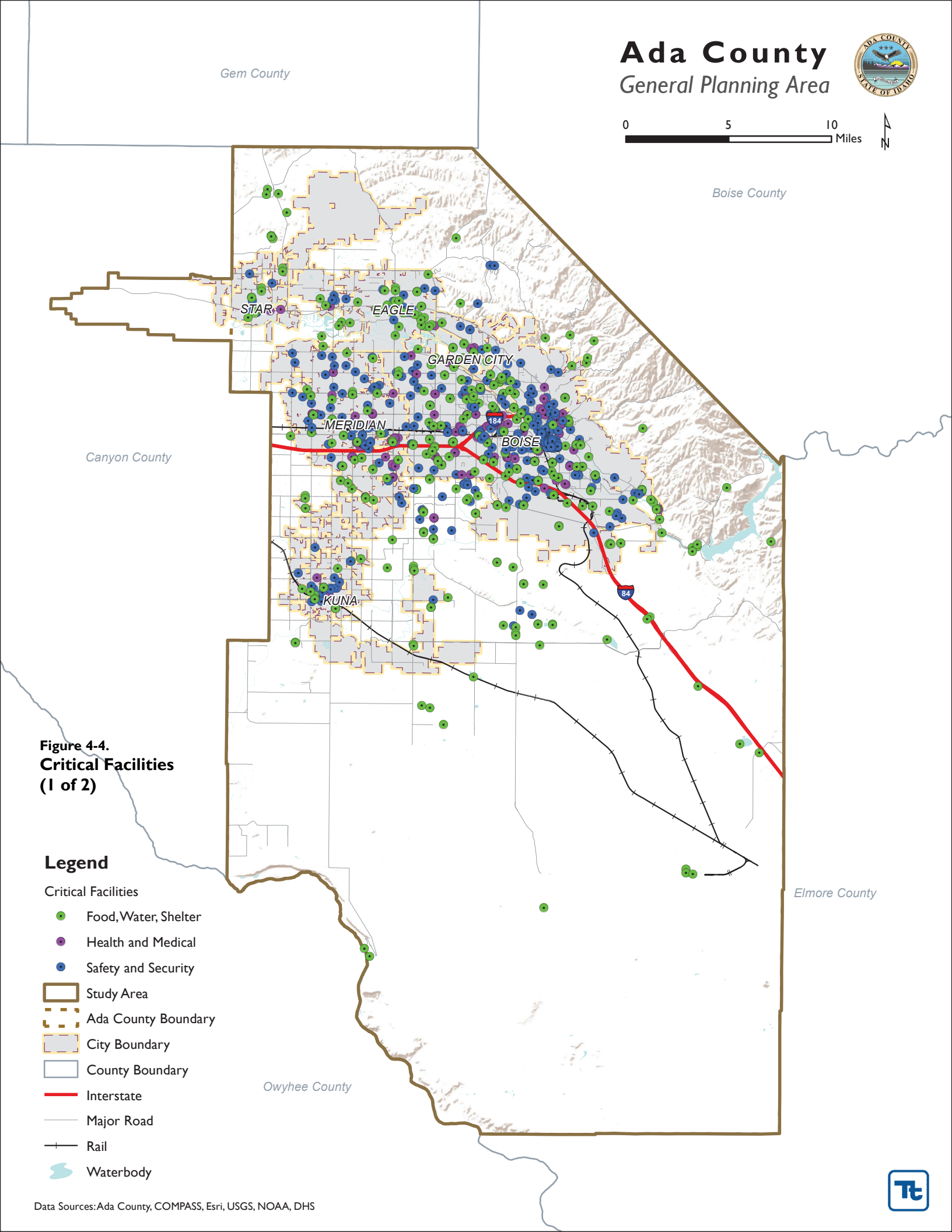


Figure 4-4.
Critical Facilities
(1 of 2)

Ada County
General Planning Area

0 5 10 Miles

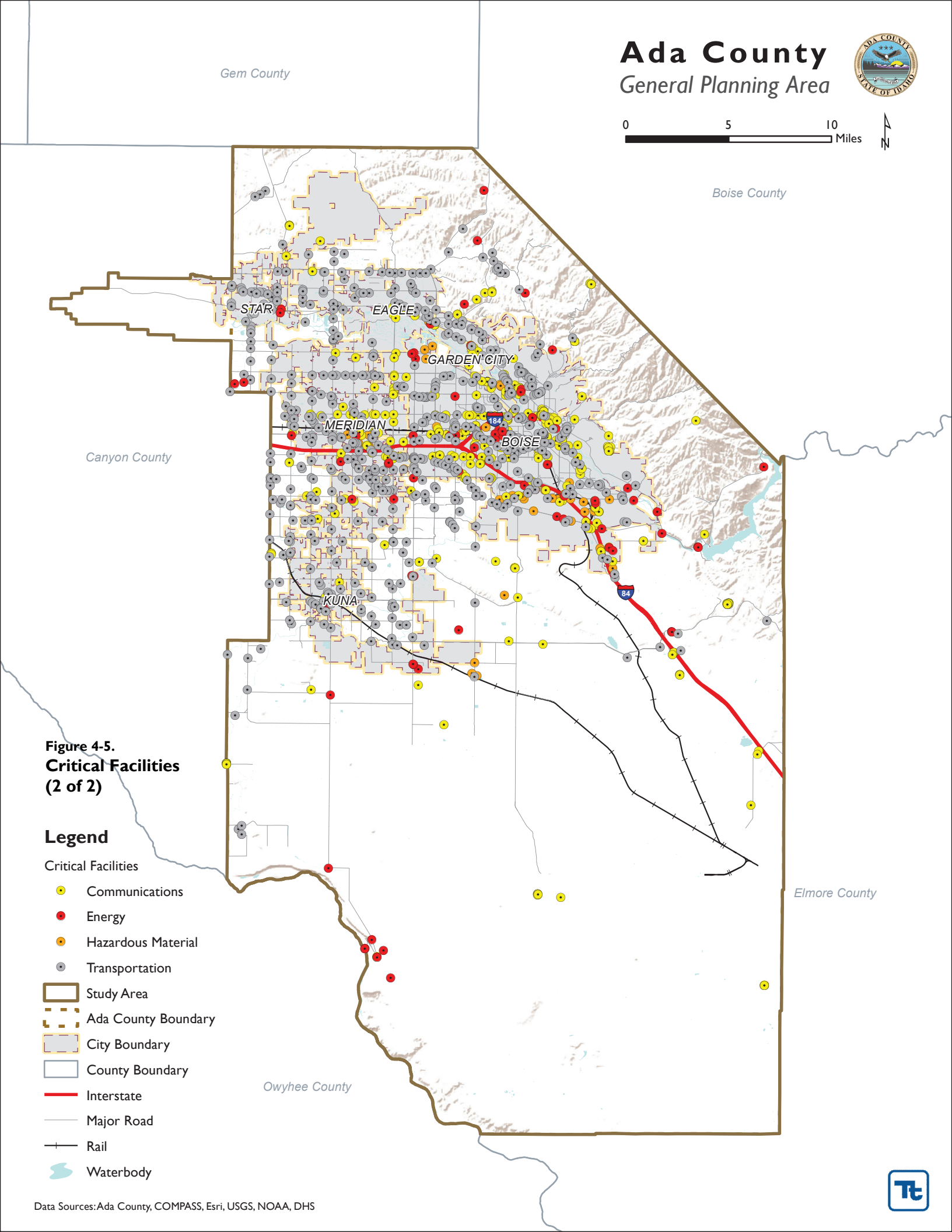


Figure 4-5.
Critical Facilities
(2 of 2)

Legend

Critical Facilities
- Communications
- Energy
- Hazardous Material
- Transportation

Study Area
Ada County Boundary
City Boundary
County Boundary
Interstate
Major Road
Rail
Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, DHS

4.5 DEMOGRAPHICS

4.5.1 Population Characteristics

Total Current Population

Ada County is the largest of Idaho's 44 counties. COMPASS (Community Planning Association of Southwest Idaho) estimated Ada County's population at 532,710 as of 2022.

Historical Population Trends

Population changes are useful socio-economic indicators. A growing population generally indicates a growing economy, while a decreasing population signifies economic decline. Table 4-4 shows the population of incorporated municipalities and the combined unincorporated areas in Ada County from 1940 to 2022. In 2022, about 12.4 percent of Ada County's residents lived outside incorporated areas. Overall growth in incorporated areas was 86.9 percent from 2000 to 2022, while the unincorporated areas of the county grew about 29.1 percent during the same timeframe.

Table 4-4. City and County Population Data

	Boise	Eagle	Garden City	Kuna	Meridian	Star	Unincorporated County	Ada County Total
1940	26,130	--	--	443	1,465	--	22,363	**50,401**
1950	34,393	--	764	534	1,810	--	33,148	**70,649**
1960	34,481	--	1,681	516	2,081	--	54,701	**93,460**
1970	74,990	--	2,368	593	2,616	--	31,663	**112,230**
1980	120,249	2,620	4,571	1,767	6,658	--	37,260	**173,125**
1990	125,738	3,327	6,369	1,952	9,596	648	58,145	**205,775**
2000	185,787	11,085	10,624	5,382	34,919	1,795	51,312	**300,904**
2010	205,671	19,908	10,972	15,210	75,092	5,781	59,731	**392,365**
2011	209,280	20,432	11,112	15,852	77,855	5,995	60,574	**401,100**
2012	212,244	21,009	11,234	16,191	80,369	6,196	61,648	**408,891**
2013	214,234	21,651	11,304	16,532	83,515	6,614	62,706	**416,556**
2014	216,282	22,502	11,420	16,999	87,743	7,280	64,010	**426,236**
2015	223,670	24,600	12,060	17,320	91,310	7,930	61,780	**438,660**
2016	226,900	25,510	11,420	18,430	91,420	8,150	61,020	**442,850**
2017	228,930	26,930	11,500	19,700	98,300	9,290	59,760	**454,400**
2018	232,300	29,910	11,880	20,740	106,410	10,310	59,390	**470,930**
2019	236,310	31,270	12,240	23,140	114,680	10,990	59,040	**487,660**
2020	235,684	30,346	12,316	24,011	117,635	11,117	63,868	**494,967**
2021	241,590	34,470	12,570	27,570	127,890	13,400	60,820	**518,300**
2022	243,570	33,960	13,040	27,480	133,470	14,950	66,240	**532,710**

Data Sources:
1940 – 2000, from Ada County, 2011
2010 – 2014, from Idaho Department of Labor, 2015
2011 – 2019, 2021, 2022 from COMPASS
2020 U.S. Census

Figure 4-6 shows the growth rate of Ada County from 2000 to 2022 compared to that of the State of Idaho. Over the period, Idaho's population grew by 46.6 percent (about 2.1 percent per year) while Ada County's population increased by 43.5 percent (2 percent per year). From 2010 to 2022, the County's population increased 26.1 percent, an average of 2.2 percent per year.

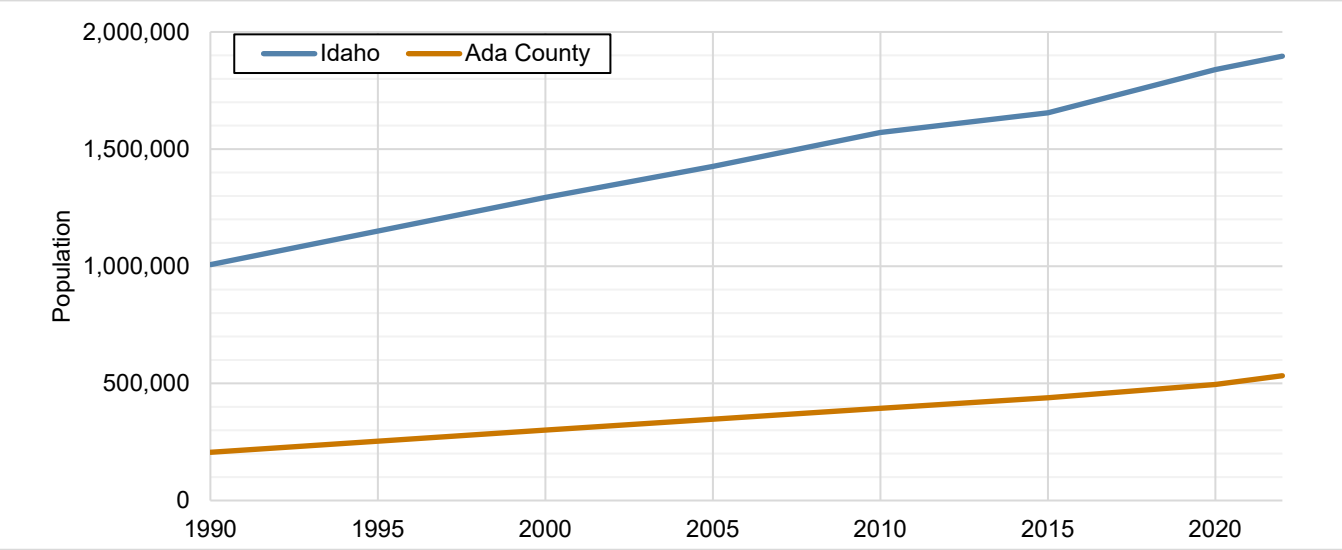


Figure 4-6. Idaho and Ada County Population Growth

4.5.2 Demographic Indicators for Social Vulnerability

Some populations are at greater risk from hazard events because of decreased resources or physical abilities. People living near or below the poverty line, the elderly, individuals with disabilities, women, children, ethnic minorities, and renters all experience, to some degree, more severe effects from disasters than the general population. These vulnerable populations may vary from the general population in risk perception, living conditions, access to information before, during and after a hazard event, capabilities during an event, and access to resources for post-disaster recovery. Indicators of vulnerability—such as disability, age, poverty, and minority race and ethnicity—often overlap spatially and often in the geographically most vulnerable locations. Detailed spatial analysis to locate areas where there are higher concentrations of vulnerable community members can help to extend focused public outreach and education to the most vulnerable community members.

Indicators from Census data are commonly used to assess social vulnerability. For the social vulnerability demographic profile component for this plan, the following indicators were selected:

- **Population Under 15 Years of Age—**Children, especially in the youngest age groups, often cannot protect themselves during a disaster because they lack the necessary resources, knowledge, or life experiences to effectively cope with the situation. Hazard mitigation planning needs to be tailored such that the community is prepared to ensure that children are safe during disaster events and that families with children have access to necessary information and tools.
- **Population Over 65 years of Age—**People 65 years old and older are likely to require financial support, transportation, medical care, or assistance with ordinary daily activities, especially during disasters. They are more likely to be vision, hearing, and/or mobility impaired, more likely to experience mental impairment or dementia, and more likely to live in assisted-living facilities where emergency preparedness is at the discretion of facility operators. Hazard mitigation needs to account for such needs.

- **People of Color—**Social and economic marginalization of certain racial and ethnic groups, including real estate discrimination, has resulted in greater vulnerability of these groups to all types of hazards. Based on data from a number of studies, African Americans, Native Americans, and populations of Asian, Pacific Islander, or Hispanic origin are likely to be more vulnerable than the broader community. Research shows that minorities are less likely to be involved in pre-disaster planning and experience higher mortality rates during disaster events. Post-disaster recovery often exhibits cultural insensitivity. Since higher proportions of ethnic minorities live below the poverty line than the majority white population, poverty can compound vulnerability. Hazard mitigation plans need to identify the spatial distribution of these population groups and direct resources to reduce their vulnerability to hazards.
- **Limited English-Speaking Households—**For populations with limited English proficiency, disaster communication may be difficult, especially in communities for whom translators and accurate translations of advisories may be scarce. Such households are likely to rely on relatives and local social networks (i.e., friends and neighbors) for information for preparing for a disaster event.
- **Persons with Disabilities—**Persons with disabilities or other access and functional needs are more likely to have difficulty responding to a hazard event than the general population. Family, neighbors, and local government are the first level of response to assist these individuals, and coordination of efforts to meet their access and functional needs is paramount to life safety efforts. Emergency managers need to distinguish between functional and medical needs to plan for incidents that require evacuation and sheltering. Knowing the percentage of population with access and functional needs allows emergency management personnel and first responders to anticipate the services needed by that population.
- **Families Below the Poverty Level—**Economically disadvantaged families have limited ability to absorb losses due to hazard impacts. Wealth enables families to absorb and recover from losses more quickly, due to insurance, savings, and often the availability of low-cost credit. People with lower incomes tend not to have access to these resources. At the same time, poorer families are likely to inhabit poor quality housing and reside in locations that are most vulnerable to hazard events. Economically disadvantaged neighborhoods are also likely to have relatively poor infrastructure and facilities, which exacerbate the disaster consequences for community members there.

These indicators were selected based on the availability of datasets at a small enough resolution to determine probable characteristics of populations within identified hazard areas. The following sections estimate the age, race, language, and disability indicators for Ada County; poverty levels are presented in Section 4.6.1.

Age Distribution

The overall age distribution for Ada County is illustrated in Figure 4-7. Based on U.S. Census data estimates, 14 percent of Ada County's population is 65 or older, compared to the state average of 16.2 percent. According to U.S. Census data, 29 percent of the County's over-65 population has disabilities of some kind and 9.2 percent have incomes below the poverty line. Of children under 18 in the county, 11.7 percent are below the poverty line. It is also estimated that 18.9 percent of the County's population is 14 or younger, compared to the state average of 18.7 percent.

Race, Ethnicity and Language

According to the U.S. Census, the racial composition of Ada County is predominantly white, at about 90.2 percent. The largest non-white racial groups are two-or-more-races, at 3.6 percent, and Asian, at 2.3 percent. Figure 4-8 shows the racial distribution in Ada County.

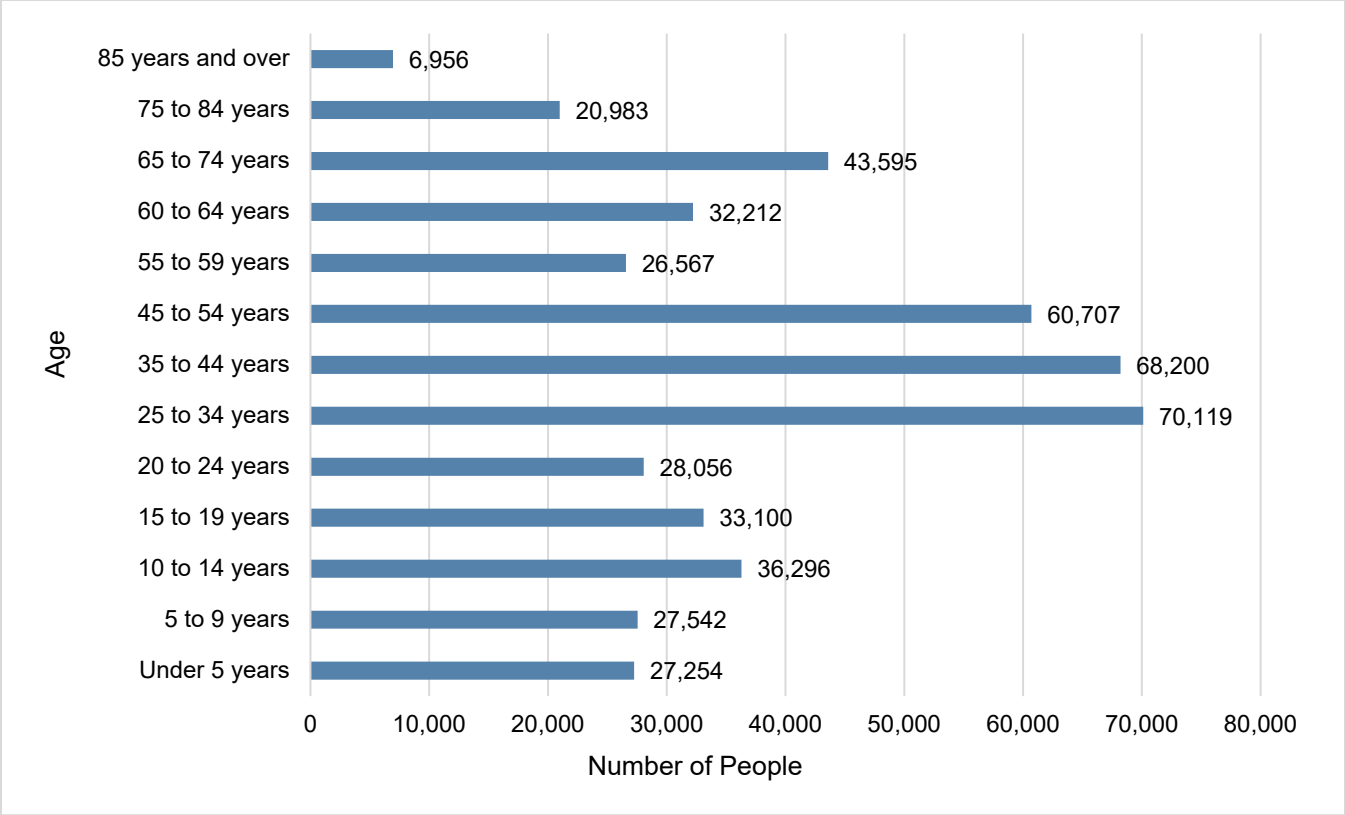


Figure 4-7. Ada County Age Distribution

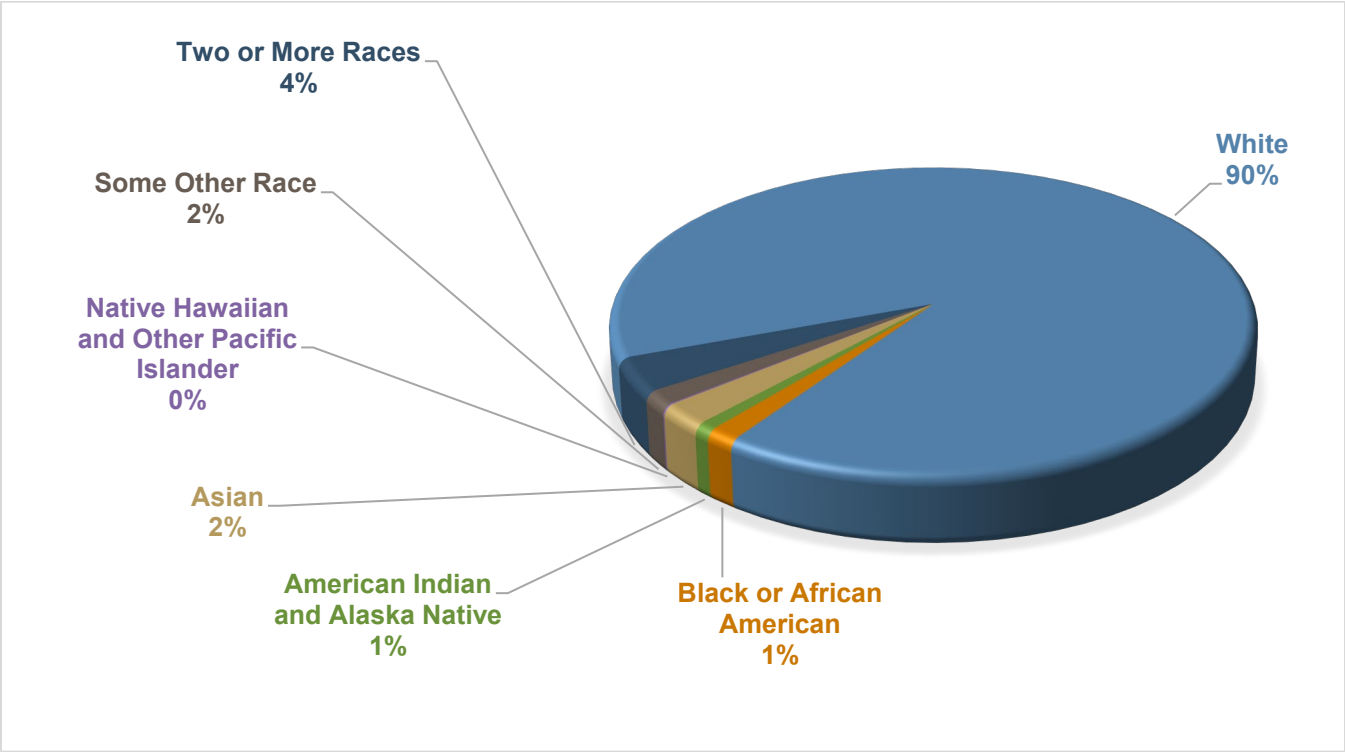


Figure 4-8. Ada County Race Distribution

The Hispanic population makes up 8.5 percent of the total population of Ada County. The County has a 6.2-percent foreign-born population. Other than English, the most commonly spoken language in Ada County is Spanish. The census estimates 3.0 percent of the county's residents speak English "less than very well."

Disabled Populations

According to U.S. Census data, 10.7 percent of the County's total population has a disability. Table 4-5 summarizes estimates of disabled people in Ada County by age group.

Table 4-5. Disability Status of Non-Institutionalized Population

Age	Persons with a Disability	Percent of Age Group
Under Age 18 years	3,520	3.1%
Age 18 to 64 years	26,722	9.2%
Age 65 years and over	20,388	29%

4.6 ECONOMY

4.6.1 Income

Based on U.S. Census Bureau estimates, per capita income in Ada County in 2019 was $37,297, and the median household income was $72,021. About 12 percent of the households in Ada County make less than $25,000 per year. Households with incomes of $150,000 or more account for 16.8 percent of total households.

The Census Bureau uses a set of income thresholds that vary by family size and composition to determine who is in poverty. If the family's total income is below the threshold, they are considered in poverty. The Census estimates that 7.7 percent of all persons in the planning area are below the poverty line.

4.6.2 Employment

Employment Levels

According to U.S. Census American Community Survey 5-year estimates for 2020, 68.0 percent of Ada County's population over the age of 16 is in the labor force—62.3 percent of women and 73.7 percent of men. Figure 4-9 compares Idaho's and Ada County's unemployment trends from 2010 through 2021. Ada County's unemployment rate was lowest in 2018, at 2.5 percent. The COVID-19 pandemic resulted in high unemployment, rising to 12.1 percent in April 2020. The rate fell back to 3.3 percent in 2021 (U.S. Bureau of Labor Statistics 2022).

Employment by Company, Industry Sector, and Occupation

Figure 4-10 and Figure 4-11 show the breakdown of employment in Ada County by industry sector and occupation type, respectively.

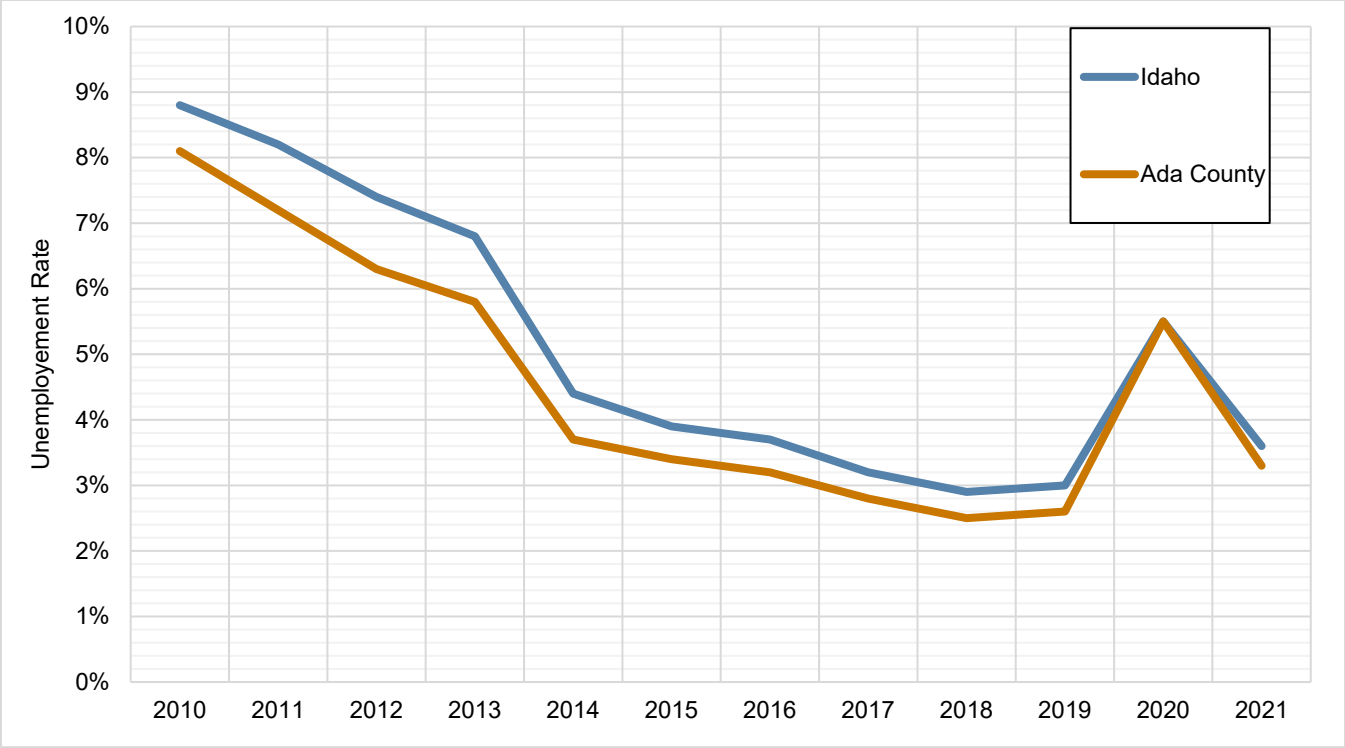


Figure 4-9. Idaho and Ada County Unemployment Rate

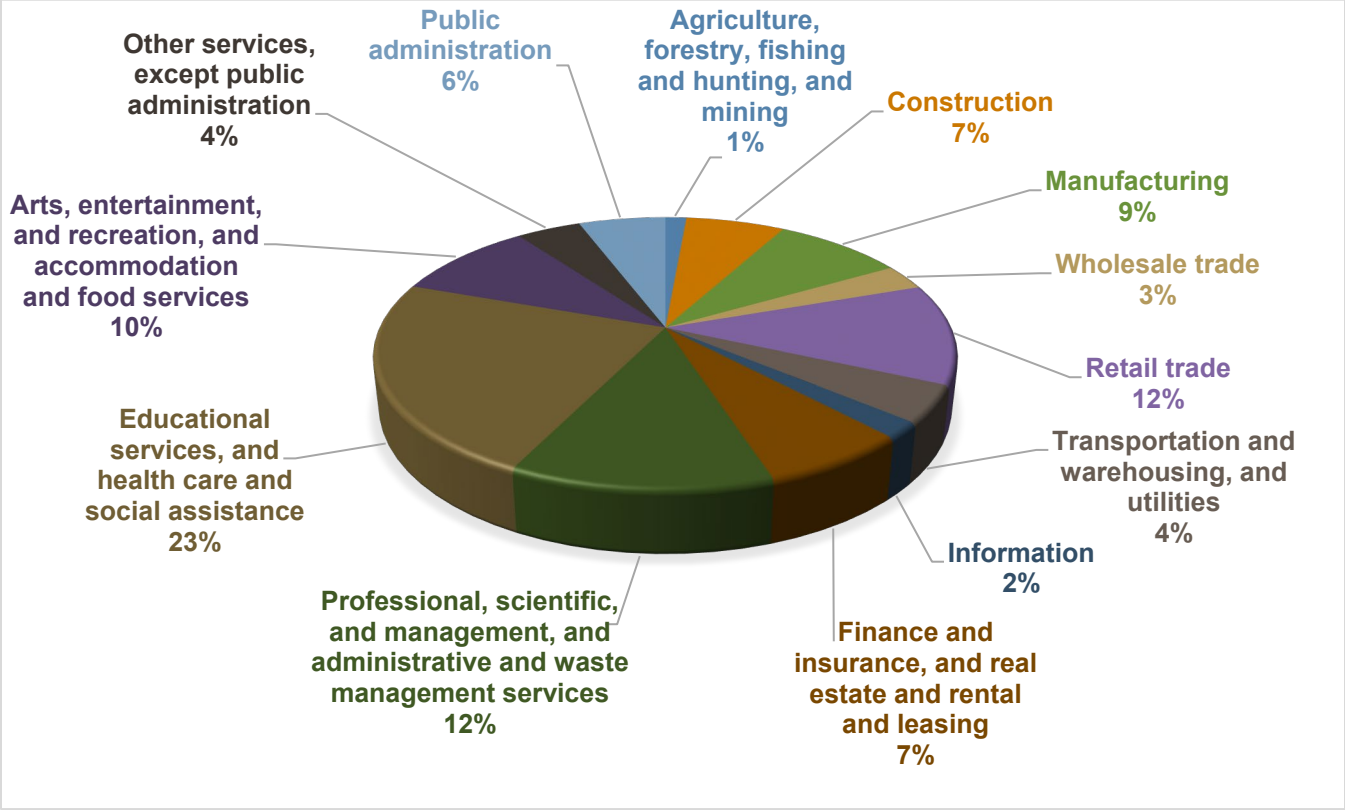


Figure 4-10. Employment by Industry in Ada County

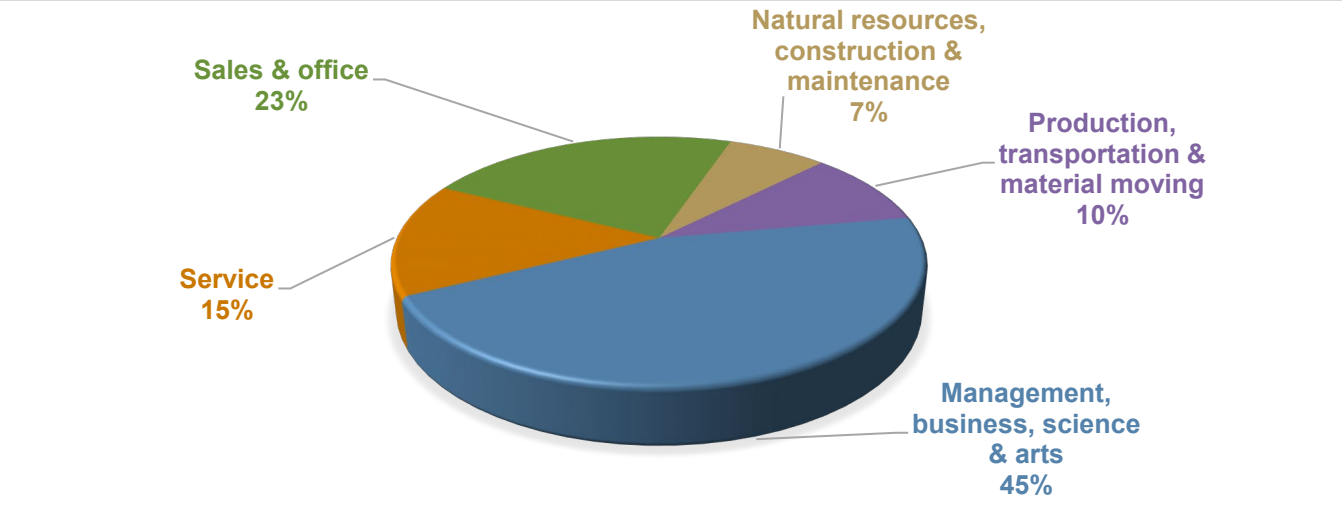


Figure 4-11. Employment by Occupation Type in Ada County

The Idaho Department of Labor identifies the following as major private employers in Ada County (listed in alphabetical order):

- Albertsons
- Blue Cross of Idaho
- Fred Meyer
- Hewlett-Packard
- Idaho Power Co.
- Micron Technology, Inc.
- Saint Alphonsus Health System
- St. Luke's Regional Medical Center
- Wal-Mart
- Wells Fargo

The State of Idaho is also a major employer in Ada County, as Boise, the state capitol, is in the county.

4.6.3 Commuting

According to the Idaho Department Labor, almost all workers living in Ada County also work in the County, with most of those who work elsewhere commuting to employment in Canyon County. The U.S. Census estimates that 80.6 percent of Ada County workers commute alone (by car, truck or van) to work, and mean travel time to work is 21.4 minutes (the state average is 21.5 minutes).

5. HAZARDS OF CONCERN

5.1 MAJOR PAST HAZARD EVENTS

Presidential disaster declarations are typically issued for hazard events that cause more damage than state and local governments can handle without federal assistance. A presidential disaster declaration puts federal recovery programs into motion to help disaster victims, businesses and public entities. The State of Idaho has experienced 32 declared events since 1956, as listed in Table 5-1. Four of these events were specifically identified as impacting Ada County (impacted counties were not identified for disasters declared prior to 1964).

Table 5-1. Presidential Disaster Declarations in Idaho for Ada County Hazards of Concern

Type of Event	Date	Disaster Declaration	Counties Impacted[a]
Flood	4/21/1956	DR-55	n/a
Flood	5/27/1957	DR-76	n/a
Wildfires	7/22/1960	DR-105	n/a
Flood	6/26/1961	DR-116	n/a
Flood	2/14/1962	DR-120	n/a
Flood	2/14/1963	DR-143	n/a
Heavy rains & flooding	12/31/1964	DR-186	**Ada**, Bannock, Benewah, Blaine, Boise, Bonneville, Butte, Camas, Caribou, Cassia, Clearwater, Elmore, Gem, Gooding, Idaho, Jerome, Kootenai, Latah, Lewis, Lincoln, Minidoka, Nez Perce, Owyhee, Payette, Power, Shoshone, and Washington.
Forest Fires	8/30/1967	DR-231	Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone
Severe storms, extensive flooding	3/2/1972	DR-324	Latah
Severe storms, snowmelt, flooding	1/25/1974	DR-415	Adams, Benewah, Bonner, Boundary, Clearwater, Kootenai, Latah, Shoshone, and Washington
Dam collapse	6/6/1976	DR-505	Bingham, Bonneville, Fremont, Jefferson, and Madison
Volcanic eruption, Mt. St. Helens	5/22/1980	DR-624	Benewah, Bonner, Boundary, Clearwater, Kootenai, Latah, Nez Perce, and Shoshone
Earthquake	11/18/1983	DR-694	Butte, Custer, and Gooding
Ice jams, flooding	2/16/1984	DR-697	Lemhi
Storms/flooding	2/11/1996	DR-1102	Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone
Severe storms/flooding	1/4/1997	DR-1154	Adams, Benewah, Boise, Bonner, Boundary, Camas, Clearwater, Elmore, Gem, Idaho, Kootenai, Latah, Nez Perce, Owyhee, Payette, Shoshone, Valley, and Washington
Flood	6/13/1997	DR-1177	Benewah, Bingham, Bonner, Bonneville, Boundary, Butte, Custer, Fremont, Jefferson, Kootenai, Madison, and Shoshone

Type of Event	Date	Disaster Declaration	Counties Impacted[a]
Wildfires	9/1/2000	DR-1341	**Ada**, Bannock, Bingham, Blaine, Boise, Clearwater, Custer, Elmore, Fort Hall Indian Reservation, Idaho, Jerome, Lemhi, Lewis, Lincoln, Power, and Valley
Heavy rains and flooding	7/6/2005	DR-1592	Nez Perce County and Nez Perce Indian Reservation.
Severe storms and flooding	2/27/2006	DR-1630	Owyhee
Flooding	7/31/2008	DR-1781	Kootenai, and Shoshone
Severe storms and flooding	7/27/2010	DR-1927	Adams, Gem, Idaho, Lewis, Payette, Valley, and Washington
Flooding, landslides, and mudslides	5/20/2011	DR-1987	Nez Perce Indian Reservation
Severe Storm and Straight Line Winds	12/23/2015	DR-4246	Benewah County, Bonner County, Boundary County, Coeur d'Alene Indian Reservation and Kootenai County.
Severe Winter Storms	2/01/2016	DR-4252	Benewah County, Bonner County and Kootenai County.
Severe Winter Storms and Flooding	4/21/2017	DR-4310	Bingham, Cassia, Elmore, Franklin, Gooding, Jefferson, Jerome, Lincoln, Minidoka, Twin Falls, Washington
Severe Storms, Flooding, Landslides, and Mudslides	5/18/2017	DR-4313	Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Shoshone, Valley
Flooding, Landslides, and Mudslides	8/27/2017	DR-4333	Blaine, Camas, Custer, Elmore, Gooding
Flooding	10/7/2017	DR-4342	**Ada**, Canyon
Severe Storms, Flooding, Landslides, and Mudslides	6/12/2019	DR-4443	Adams, Idaho, Latah, Lewis, Nez Perce Indian Reservation, Valley
COVID-19 Pandemic	4/9/2020	DR-4534	**Ada**, Adams, Bannock, Bear Lake, Benewah, Bingham, Blaine, Boise, Bonner, Bonneville, Boundary, Butte, Camas, Canyon, Caribou, Cassia, Clark, Clearwater, Custer, Elmore, Franklin, Fremont, Gem, Gooding, Idaho, Jefferson, Jerome, Kootenai, Latah, Lemhi, Lewis, Lincoln, Madison, Minidoka, Nez Perce, Oneida, Owyhee, Payette, Power, Shoshone, Teton, Twin Falls, Valley, Washington
Straight-Line Winds	3/4/2021	DR-4589	Benewah, Bonner, Kootenai, Shoshone

a. Federal disaster declarations were not issued by county until 1964. Declarations prior to that date are statewide
b. In Idaho, as in many other states, the Hurricane Katrina disaster declaration was related to the need to assist evacuees.

Review of these events helps identify targets for risk reduction and ways to increase a community's capability to avoid large-scale events in the future. Still, many natural hazard events do not trigger federal disaster declaration protocol but have significant impacts on their communities. These events are also important to consider in establishing recurrence intervals for hazards of concern.

5.2 IDENTIFIED HAZARDS OF CONCERN

For this update, the Steering Committee considered the full range of natural hazards that could impact the planning area and then ranked the hazards that present the greatest concern. The process incorporated review of state and local hazard planning documents, as well as local, state and federal information on the frequency, magnitude and costs associated with hazards that have impacted or could impact the planning area. Anecdotal information regarding natural hazards and the perceived vulnerability of the planning area's assets to them was also used. Based on the review, this plan update addresses the following natural hazards of concern:

- Dam/canal failure
- Drought

- Earthquake
- Extreme weather
- Flood
- Landslide
- Volcano (ash fall)
- Wildfire.

Climate is not assessed as an individual hazard, but a profile is provided describing how future climate conditions could affect the hazards of concern assessed in this plan.

In addition to the natural hazards of concern, this plan update addresses non-natural (human-caused) hazards that are of most concern for the planning area. These hazards of concern are either addressed in the Ada County Threat Hazard Inventory and Risk Assessment prepared and maintained by EMCR or included to meet the emergency management standard criteria for the Emergency Management Accreditation Program (EMAP). EMAP fosters excellence and accountability in emergency management and homeland security programs by establishing credible standards applied in a peer review accreditation process. EMAP also provides emergency management programs the opportunity to be recognized for compliance with industry standards and to demonstrate accountability in emergency management. The discussion of the following non-natural hazards highlights the extensive capability within the planning area to address non-natural hazards:

- Civil disturbance and terrorism
- Cyber disruption
- Hazardous materials release
- Public health emergency/pandemic
- Radiological event
- Utility failure.

6. REGULATIONS AND PROGRAMS

Existing laws, ordinances and plans at the federal, state and local level can support or impact hazard mitigation actions identified in this plan. Hazard mitigation plans are required to include a review and incorporation, if appropriate, of existing plans, studies, reports, and technical information as part of the planning process (44 CFR, Section 201.6(b)(3)). Pertinent federal and state laws are described below. Each planning partner has individually reviewed existing local plans, studies, reports, and technical information in its jurisdictional annex, presented in Volume 2.

6.1 RELEVANT FEDERAL AND STATE AGENCIES, PROGRAMS AND REGULATIONS

State and federal regulations and programs that need to be considered in hazard mitigation are constantly evolving. For this plan, a review was performed to determined which regulations and programs are currently most relevant to hazard mitigation planning. The findings are summarized in Table 6-1 and Table 6-2. Short descriptions of each program are provided in Appendix B.

Table 6-1. Summary of Relevant Federal Agencies, Programs and Regulations

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
Americans with Disabilities Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
Bureau of Land Management	Wildfire Hazard	The Bureau funds and coordinates wildfire management programs and structural fire management and prevention on BLM lands.
Civil Rights Act of 1964	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
Clean Water Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
Community Development Block Grant Disaster Resilience Program	Action Plan Funding	This is a potential alternative source of funding for actions identified in this plan.
Community Rating System	Flood Hazard	This voluntary program encourages floodplain management activities that exceed the minimum National Flood Insurance Program requirements.
Disaster Mitigation Act	Hazard Mitigation Planning	This is the current federal legislation addressing hazard mitigation planning.
Emergency Relief for Federally Owned Roads Program	Action Plan Funding	This is a possible funding source for actions identified in this plan.
Emergency Watershed Program	Action Plan Funding	This is a possible funding source for actions identified in this plan.
Endangered Species Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
Federal Energy Regulatory Commission Dam Safety Program	Dam Failure Hazard	This program cooperates with a large number of federal and state agencies to ensure and promote dam safety.
Federal Wildfire Management Policy and Healthy Forests Restoration Act	Wildfire Hazard	These documents mandate community-based collaboration to reduce risks from wildfire.
National Dam Safety Act	Dam Failure Hazard	This act requires a periodic engineering analysis of most dams in the country
National Environmental Policy Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
National Fire Plan (2001)	Wildfire Hazard	This plan calls for joint risk reduction planning and implementation by federal, state and local agencies.
National Flood Insurance Program	Flood Hazard	This program makes federally backed flood insurance available to homeowners, renters, and business owners in exchange for communities enacting floodplain regulations
National Incident Management System	Action Plan Development	Adoption of this system for government, nongovernmental organizations, and the private sector to work together to manage incidents involving hazards is a prerequisite for federal preparedness grants and awards
National Landslide Preparedness Act	Risk Assessment of Landslide Hazard	This act authorized a national landslide hazards reduction program and a 3D elevation program, providing tools and data to assess the landside hazard.
Presidential Executive Order 11988 (Floodplain Management)	Flood Hazard	This order requires federal agencies to avoid long and short-term adverse impacts associated with modification of floodplains
Presidential Executive Order 11990 (Protection of Wetlands)	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable presidential executive orders.
U.S. Army Corps of Engineers Dam Safety Program	Dam Failure Hazard	This program is responsible for safety inspections of dams that meet size and storage limitations specified in the National Dam Safety Act.
U.S. Army Corps of Engineers Flood Hazard Management	Flood Hazard, Action Plan Implementation, Action Plan Funding	The Corps of Engineers offers multiple funding and technical assistance programs available for flood hazard mitigation actions
U.S. Bureau of Reclamation Safety Evaluation of Existing Dams Program	Dam Failure Hazard	The basic objective of the program is to identify dams that pose an increased threat to the public, and to quickly complete analyses to expedite corrective action decisions.
U.S. Fire Administration	Wildfire Hazard	This agency provides leadership, advocacy, coordination, and support for fire agencies and organizations.
U.S. Fish and Wildlife Service	Wildfire Hazard	This service's fire management strategy employs prescribed fire throughout the National Wildlife Refuge System to maintain ecological communities.

Table 6-2. Summary of Relevant State Agencies, Programs and Regulations

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
State and Local Building Codes	Mitigation actions involving new or rehabilitated structures	All actions will be required to comply with applicable building codes
Subdivision Regulations	Mitigation actions involving development	Subdivision regulations can specify requirements for layout and location of infrastructure, lots and other facilities in hazard prone areas as land is developed.
Comprehensive Plans and Zoning	Hazard mitigation planning	In Idaho, a comprehensive plan is required to include a section on hazards
Floodplain Zoning	Flood hazard	State law authorizes Idaho communities to adopt floodplain zoning to regulate any mapped or unmapped flood hazard area.
Idaho Department of Water Resources Dam Safety Program	Dam failure hazard	The Dam Safety Program monitors dams at the state level, currently regulating nearly 600 water storage dams and more than 20 mine tailings impoundment structures.
Idaho Disaster Preparedness Act of 1975	Mitigation actions involving disaster preparedness	This act makes it a state policy to plan and prepare for disasters and emergencies.
Idaho Silver Jackets Program	Flood hazard	Silver Jackets Program is the state-level implementation of the Army Corps of Engineers National Flood Risk Management Program

6.2 EMERGENCY MANAGEMENT ACCREDITATION PROGRAM

EMAP establishes voluntary standards, assessment, and an accreditation process for disaster preparedness programs throughout the country. The accreditation process evaluates emergency management programs on compliance with requirements in the following areas:

- Administration, coordination, administration and finance, and laws and authorities
- Hazard identification, risk assessment and consequence analysis
- Hazard mitigation
- Prevention
- Operational planning and procedures
- Incident management
- Resource management, mutual aid and logistics
- Communications and warning
- Facilities
- Training
- Exercises, evaluations, and corrective actions, and
- Emergency public information and education.

EMAP defines “emergency management” to include organizations involved in prevention of, mitigation against, preparedness for, response to, and recovery from disasters or emergencies (Emergency Management Accreditation Program 2019).

6.3 LOCAL PROGRAMS

All participating jurisdictions compiled an inventory and analysis of existing authorities and capabilities called a "capability assessment." A capability assessment creates an inventory of a jurisdiction's mission, programs, and policies and evaluates its capacity to carry them out. This assessment identifies potential gaps in the jurisdiction's capabilities.

The planning partnership views all core jurisdictional capabilities as fully adaptable to meet a jurisdiction's needs. Every code can be amended, and every plan can be updated. Such adaptability is itself considered to be an overarching capability. If the capability assessment identified an opportunity to add a missing core capability or expand an existing one, then doing so has been selected as an action in the jurisdiction's action plan, which is included in the individual annexes presented in Volume 2 of this plan.

Capability assessments for each planning partner are presented in the jurisdictional annexes in Volume 2. The sections below describe the capabilities evaluated in the assessment.

6.3.1 Planning and Regulatory Capabilities

Jurisdictions have the ability to develop policies and programs and to implement rules and regulations to protect and serve residents. Local policies are typically identified in a variety of community plans, implemented via a local ordinance, and enforced through a governmental body.

Jurisdictions regulate land use through the adoption and enforcement of zoning, subdivision, and land development ordinances, building codes, building permit ordinances, floodplain, and stormwater management ordinances. When effectively prepared and administered, these regulations can lead to hazard mitigation.

6.3.2 Fiscal Capabilities

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant-funding eligibility, and local jurisdictional authority to generate internal financial capability, such as through impact fees.

6.3.3 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers.

6.3.4 Compliance with National Flood Insurance Program

Flooding is the costliest natural hazard in the United States and, with the promulgation of recent federal regulation, homeowners throughout the country are experiencing increasingly high flood insurance premiums. Community participation in the National Flood Insurance Program (NFIP) opens up opportunity for additional grant funding associated specifically with flooding issues. Assessment of the jurisdiction's current NFIP status

and compliance provides planners with a greater understanding of the local flood management program, opportunities for improvement, and available grant funding opportunities.

6.3.5 Public Outreach Capability

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing this outreach and education capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community based on education and public engagement.

6.3.6 Community Classifications

Other programs, such as the Community Rating System, StormReady, and Firewise USA, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum requirements set forth by local, state, and federal regulations in order to create a more resilient community. These programs complement each other by focusing on communication, mitigation, and community preparedness to save lives and minimize the impact of natural hazards on a community.

6.3.7 Development and Permitting Capability

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community.

6.3.8 Integration Opportunity

The assessment looked for opportunities to integrate this mitigation plan with the planning and regulatory capabilities identified. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. Planning partners considered actions to implement this integration as described in their jurisdictional annexes.

6.3.9 Expansion of Existing Capabilities

Local hazard mitigation plans are required to document each jurisdiction's ability to expand on and improve existing policies and programs. For this plan update, all planning partners reviewed their existing capabilities through the jurisdictional annex process (see Volume 2) and developed mitigation actions to address identified gaps in their capabilities or to expand on or improve existing capabilities. In the analysis to assign each mitigation action to a defined category (see Section 26.3), these actions are classified as "community capacity building" actions, which are defined as follows:

> *Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.*