

LOCAL INFORMATION

Past occurrences of hazard events are one predictor of future events. A review of the hazard history of counties helps to provide a better understanding of what hazards the state is susceptible to. Emergency planning is based on hazard identification and risk assessment. Risk from natural hazards is the result of a combination of hazard, vulnerability, and exposure. Risk assessment is the process of measuring potential loss of life, personal injury, economic injury, and property and crop damage resulting from hazards.

A survey was conducted by the Colorado Office of Emergency Management in 2003-4 to determine which natural hazards were prevalent and of concern to counties. The survey was targeted to emergency management personnel. This survey coupled with completed hazard mitigation plans identified 13 natural hazards that present substantial risk to one or more communities. Natural hazards of primary concern in the state include: avalanche, drought, earthquake, flood, hail, heat wave, landslide, land subsidence, thunderstorm and lightning, tornado, severe storm and wind, winter weather, and wildfire.

Information is presented by County in this section; this section is designed to summarize the hazards facing Colorado's communities. Local governments must continually assess the hazards threatening their communities and prioritize development of response capabilities and mitigation efforts. Assessment and efforts change along with population, land use, finances, and the local environment. Coloradans become vulnerable to hazards when they live, work, or visit an area where these events occur. Individuals and communities that prepare for the occurrence of a hazard are less vulnerable to its consequences than those that do not.

The vulnerability of Colorado's population is rooted in a relationship between the occurrence of hazard events, the proximity of people and property to these occurrences, and the degree that a community and its members are committed and prepared to cope with these occurrences and mitigate their effects.

Over the past decade, Colorado has experienced rapid population growth. According to the 1990 census, Colorado's population was 3,294,473. New figures from the 2000 census reveal that Colorado's population has grown by 1,006,788 (30.6%), setting the population total for the State at 4,301,261.

The continued growth of Colorado's population increases the likelihood that many communities will

become more vulnerable to disasters. Many of the areas currently under development are in high hazard areas. Compounding this problem, many public agencies responsible for the application of planning and mitigation are understaffed and on limited budgets.

Colorado's tourist population presents another vulnerability concern. Many areas of the State depend on a high number of tourists each year. Most of these visitors flock to mountain locations and are, for the most part, unaware of the potential hazards associated with these areas. The preparedness, planning, and mitigation efforts undertaken by mountain communities must consider these visitors.

The Colorado Division of Emergency Management has a goal for all communities within the State to adopt local hazard mitigation plans as a means to reduce further losses from natural hazard events.

Mitigation planning should take place in all public agencies, levels of government and in the operations of most large, private businesses. Multi-objective plans should integrate hazard loss reduction measures with other related local and regional planning activities. Plans should also integrate management of wildland urban interfaces, floodplains, stormwater and wastewater systems, and proper use of open space, as well as support successful implementation of mitigation projects. Incorporation of hazard mitigation and preparedness ideas in decisions about land development, industrial development, and the use of natural resources should be the goal of governments throughout the state.

There is a close correlation between settlement patterns, population growth, and the cost of disasters. When a disaster strikes a densely populated area the costs are usually greater than in those incurred in a sparsely populated region. As a community grows, competition for remaining land increases. This results in a tendency to allow development in areas where hazards exist. Mitigation, through processes that guide development, lessens damage caused by hazard events and generates a monetary benefit by reducing funds spent on disaster response and recovery.

Not all hazards can be avoided through mitigation efforts so a community must continually plan for response and recovery. Public awareness of hazards to which they may be exposed, and education on preparation methods, is paramount to every community's emergency planning effort. A hazard analysis is a living document that requires routine review and update as a community and its hazards change.

LOCAL REGULATIONS

The Colorado Office of Emergency Management conducted a brief survey late in 2000 through spring 2001. County and city planners and building officials were requested to reply. The survey contained six questions:

- Do you have regulations pertaining to floodplains?
- Do you have regulations pertaining to geologic hazards?
- Do you have regulations pertaining to wildfire hazards?

- Do you have regulations pertaining to siting electric transmission lines?
- Do you have regulations pertaining to siting pipelines?
- Do you have regulations pertaining to siting hazardous waste facilities?

Of 27 cities surveyed, 26 responded.
Of 63 counties surveyed, 62 responded.

REGULATIONS SURVEY FOR LOCAL GOVERNMENTS 2000-2001						
City	Floodplain regulations	Geologic hazard regulations	Wildfire regulations	Electric transmission line regulations	Pipeline placement regulations	Hazardous waste regulations
Arvada	yes	yes	no	yes	no	yes
Aurora	yes	no	no	no	no	yes
Boulder	yes	no	no	no	yes	no
Brighton	yes	no	no	no	yes	yes
Broomfield	yes	yes	no	no	no	no
Canon City	yes	no	no	no	no	no
Castle Rock	yes	yes	yes	yes	yes	yes
Colorado Spgs	yes	yes	no	no	no	no
Commerce City	yes	no	no	no	no	no
Englewood	yes	no	no	yes	yes	no
Ft Collins	yes	no	no	yes	yes	yes
Golden	yes	no	no	no	no	no
Grand Junction	yes	yes	yes	no	no	no
Greeley	yes	yes	yes	no	yes	yes
Lafayette	yes	yes	no	no	no	no
Lakewood	yes	yes	no	no	no	yes
Littleton	yes	no	no	no	yes	yes
Longmont	yes	no	no	yes	yes	yes
Louisville	yes	yes	no	yes	no	n/a
Loveland	yes	yes	yes	yes	yes	yes
Northglenn	yes	no	no	no	no	yes
Parker	yes	no	no	no	no	no
Pueblo						
Thornton	yes	no	no	no	yes	yes
Westminster	yes	no	no	no	no	no
Wheatridge	yes	no	no	no	no	no

Source: Colorado Office of Emergency Management 2001

County	Floodplain regulations	Geologic hazard regulations	Wildfire regulations	Electric line regulations	Pipeline regulations	Hazardous waste regulations
Adams	yes	yes	no	yes	yes	yes
Alamosa	yes	no	no	no	no	No
Arapahoe	yes	yes	no	yes	yes	no
Archuleta	yes	yes	yes	no	no	no
Baca	yes	no	no	yes	no	yes
Bent	yes	yes	no	no	no	no
Boulder	yes	yes	yes	n/a	yes	yes
Chaffee	yes	yes	no	no	no	no
Cheyenne	no	no	no	no	yes	yes
Clear Creek	yes	no	yes	no	no	no
Conejos	yes	yes	yes	no	no	yes
Costilla	yes	no	no	yes	no	no
Crowley	no	no	no	no	no	no
Custer	no	no	no	no	no	no
Delta	yes	no	no	yes	yes	yes
Denver	yes	yes	no	yes	yes	yes
Dolores	yes	yes	yes	yes	no	yes
Douglas	yes	yes	yes	yes	no	no
Eagle	yes	yes	yes	yes	yes	yes
Elbert	no	no	no	yes	yes	no
El Paso	yes	yes	yes	no	no	no
Fremont	yes	yes	yes	no	no	yes
Garfield	yes	no	no	yes	yes	no
Gilpin	yes	yes	yes	no	no	no
Grand	yes	yes	no	yes	yes	no
Gunnison	yes	yes	yes	yes	yes	yes
Hinsdale	yes	no	no	no	no	no
Huerfano	yes	no	no	yes	yes	yes
Jackson	yes	yes	yes	no	no	no
Jefferson	yes	yes	yes	no	no	yes
Kiowa	no	no	no	no	no	no
Kit Carson	no	no	no	yes	yes	yes
Lake	yes	yes	yes	no	yes	no
La Plata	yes	yes	no	yes	yes	no
Larimer	yes	yes	yes	no	no	no
Las Animas	yes	no	no	yes	no	yes
Lincoln	yes	yes	yes	yes	yes	yes
Logan	yes	yes	no	no	no	yes
Mesa	yes	yes	yes	yes	yes	no
Mineral	yes	no	no	no	no	no
Moffat	yes	no	*	no	no	no
Montezuma	yes	yes	no	yes	no	yes
Montrose	yes	yes	yes	no	yes	yes
Morgan	yes	no	no	yes	yes	yes
Otero	yes	no	yes	no	no	yes
Ouray	yes	yes	yes	yes	yes	no
Park	yes	yes	no	no	no	yes
Phillips	yes	no	no	yes	yes	yes
Pitkin						
Prowers	yes	no	no	no	no	no
Pueblo	yes	yes	no	no	no	no
Rio Blanco	yes	yes	yes	yes	no	yes
Rio Grande	yes	yes	no	no	no	no
Routt	yes	yes	no	yes	yes	no
Saguache	no	no	no	no	no	no
San Juan	yes	yes	yes	no	no	no
San Miguel	yes	yes	yes	no	no	no
Sedgwick	yes	no	no	yes	yes	yes
Summit	yes	yes	yes	yes	yes	yes
Teller	yes	yes	yes	no	no	no
Washington	yes	yes	yes	yes	yes	yes
Weld	yes	yes	no	yes	yes	yes
Yuma	yes	yes	no	yes	yes	yes

Source: Colorado Office of Emergency Management 2001

International Codes - Adoption by Jurisdiction

To ensure you have accurate information, please contact the jurisdiction directly.

State/Jurisdiction	X = Effective Statewide				A = Adopted, but may not yet be effective						L = Adopted by Local Governments				Comments
	IBC	IRC	IFC	IMC	IPC	IPSDC	IFGC	IECC	IPMC	IEBC	IECCPC	IUMIC	IZC	IECEC	
Jefferson County	L	L	L	L	L		L	L							Adopted
Jonestown					L										
Indian Hills FPD			L												
Keenesburg				L	L										
Keosau	L	L		L	L		L								
Kremming, Town of	L	L		L	L		L								
La Plata County	L	L		L	L		L	L							Adopted
Lafayette	L	L		L	L		L	L							
Lake, County of									L						
Lake Dillon FPD			L												
Lakewood, City of	L	L	L	L	L		L	L							
Lamar	L	L	L	L	L		L		L						
Larimer County		L													Adopted effective 11-17-11
Lincoln	L	L		L	L		L		L					L	
Logan County	L	L		L	L										
Longmont	L	L	L	L	L		L	L	L						
Louisville	L	L	L	L	L		L	L							
Lower Valley Fire District			L												
Lyons	L	L		L	L		L								
Manitou	L	L						L	L						
Mead	L	L		L	L		L								
Mesa County Regional	L	L	L	L			L	L	L						Detached from Front Range, County, Colorado & City of Grand Junction
Mineral	L	L		L	L										
Moffat County	L	L		L	L										
Montezuma	L	L		L	L		L							L	
Mountain Village	L	L		L	L		L		L						
Mt. Crested Butte					L										
Nederland	L	L		L	L		L	L							
Northglenn	L	L		L	L		L	L							Adopted
Nunn	L	L		L	L		L								
Oak Creek					L										
Oakland City	L	L		L	L		L	L							
Parter	L	L	L	L	L		L	L		L					Adopted
Parter Fire Protection District			L												
Pafside	L	L	L	L			L	L	L						
Pevee	L	L		L	L		L								
Piñon County	L	L		L	L		L			L					
Platteville	L	L		L	L		L								
Poncha Springs	L	L													
Pueblo, City of	L	L						L							Adopted effective 1-1-11
Pueblo, County of	L	L													Adopted
Rangely	L	L		L	L	L	L								
Red Cliff	L	L		L	L										
Red White & Blue Fire Rescue			L												
Rye	L	L		L	L		L								Adopted
Rio Blanco County	L	L		L	L										
Rio Grande County	A	A		A											Adopted effective 12-1-11
Routt County Regional					L										Detached from Steamboat Springs
Salida	L	L	L												
San Miguel County	L	L		L			L	L		L					Effective 1-1-11
Sevance	L	L		L	L		L								
Shelton	L	L	L	L	L		L	L	L	L					Adopted
Shickhome	L	L	L	L	L		L							L	
Snake River FPD			L												
Snowmass Village	L	L	L	L	L		L	L		L					
South Metro Fire District			L												
Steamboat Springs					L										
Sterling	L	L	L	L	L										
Summit County	L	L		L	L		L								L
Superior	L	L	L	L	L	L	L	L	L				L	L	
Thompson	L	L	L	L	L		L								
Timnath	L	L		L	L		L								
Vail				L	L										
Weld County	L	L		L	L		L								
Wellington	L	L		L	L		L								
West Metro FPD			L												
Westminster	L	L	L	L	L		L	L							
White Park	L	L	L	L	L		L								
Wheat Ridge									L						
Yampa					L										

ADAMS COUNTY

Adams County is located to the northeast of Denver. The southwestern part of the County is heavily populated and contains several cities that are suburbs of Denver. The eastern part of the County is rural and agriculturally oriented. Adams County participated in the development of and is included in the **Denver Regional Council of Governments Hazards Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified thunderstorm (tornado/hail/lightning), winter storm, flooding and drought as the hazards that pose the greatest possible risk.

Thunderstorms-Adams County is second in the State behind Weld County in the number of tornadic events that occur each year. From 1950 to 2001 there have been 116 reported tornado events, with 43 associated injuries and \$32 million dollars in property and crop damage. Hail forms during thunderstorms, and Colorado has more thunderstorm days than any other state except Florida. The State's high mountains and high elevation increase the likelihood that hail will form in a thunderstorm, making Colorado one of the hail capitals of the world. One hundred thirty-five hail storms have been reported between 1955-2001. There were six injuries and two fatalities associated with nine lightning events reported from 1980 to 2002. Through the hazard identification and risk assessment process over 40,000 residential structures and over 400 business are potentially exposed to high hail hazards.

Winterstorms-Heavy winter storms affecting the metro area occurred in 1913, 1982, 1997 and 2003. Heavy snow storms can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair and removal costs can be significant.

Flooding-There are 11 recorded flood events for Adams County between 1993 and 2003. Descriptions of historic flood events are in the Denver Regional Council of Governments Hazards Mitigation Plan on Page 25. The hazard identification and risk assessment process identified 3,500 residential and over 60 businesses who have potential exposure to flood hazard.

Population (2000):	348,618
% Growth from 1990:	37%
County Size (square miles):	1,184
County Seat:	City of Brighton

Drought-Drought is perhaps one of the most complex natural hazards because it is not a distinct event, with defined beginning or end. The region has experienced drought for the last 4 years. 2002 was the driest year on record for the Denver region and much of the State. The eastern portion of the County is primarily agricultural, making the area very vulnerable to drought.

Additional Information-The following communities participate in the **National Flood Insurance Program**: Unincorporated Adams County and the Cities of Arvada, Aurora, Brighton, Commerce City, Federal Heights, Northglenn, Thornton and Westminster. According to the **2003 Community Rating System Eligible Communities List**, the Cities of Aurora, Thornton and Westminster have ratings of eight and Arvada has seven.

Disaster Declaration History:

2000	USDA Disaster	Drought
2001	State	Severe Weather
2002	Presidential Disaster	Wildfire
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

- Upgrade flood warning system
- Relocation/acquisition in Federal Heights
- Channel modifications in Arvada
- Critical facility protection in Federal Heights
- Update Arvada's structural design standards
- Create flood warning systems for Federal Heights



Barr Lake State Park, Photo reprinted from Colorado State Parks website

ALAMOSA COUNTY

Alamosa County is in the south central region of Colorado. It is a County with varied topography ranging from mountains along the northeastern border to high deserts and agricultural areas. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified thunderstorms (hail/wind/lightning), flooding and tornados as the County's most probable exposure to hazard.

Thunderstorms-Thunderstorms and their associated threats of high winds, lightning and hail are a hazard for Alamosa County. Between 1950 and 2004, 13 thunderstorms and high wind events were recorded in the County. In 1973, a lightning strike started a forest fire on Mt. Blanca destroying thousands of acres. From the period of 1980 through 2002, one reported injury occurred from lightning. Between 1950 and 2004, 10 hail events were reported in the County. A hailstorm in August 1993 re-sulted in \$500,000 in damage, including \$75,000 in damage to nine aircraft at the Alamosa Airport.

Tornado-Eleven tornado events have been recorded from 1950 through 2004. The highest recorded tornadic event was an F2 in 1955.

Flooding-For almost a century, flooding along the Rio Grande River has caused damage to the Town of Alamosa. In June 1927, snowmelt and heavy rains flooded the Rio Grande River from Rio Grande Reservoir to past Alamosa. Five bridges were destroyed and train service was halted. Three deaths were associated with this event. Mitigation measures have been implemented on the river channel. A levee constructed by the Army Corp of Engineers has effectively reduced, but not eliminated, the vulnerability of the City's residents.

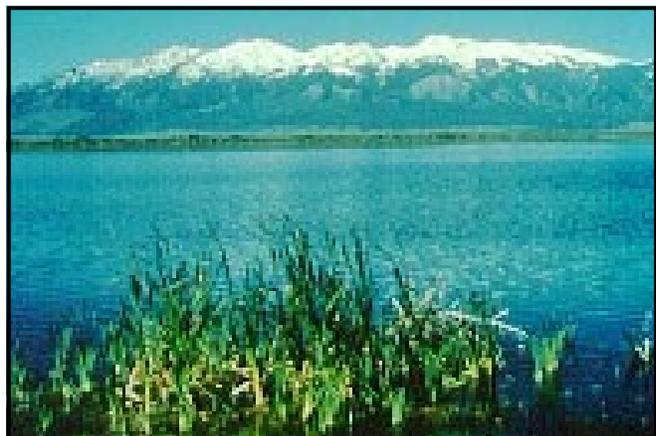
Population (2000):	14,966
% Growth from 1990:	10%
County Size (square miles):	720
County Seat:	Alamosa

Additional Information-Although much of the County is agricultural, Colorado State Forest Service figures show that as of 1999, there is one subdivision totaling 200 acres in the urban/wildland interface. In 2000, a wildfire spread from a neighborhood burning pit near the Great Sand Dunes National Monument, where about 5,000 acres of grass and juniper burned. Alamosa County is a participant in the **Emergency Fire Fund**. The San Juan River (Jackson Mnt.) landslide area is a known active landslide area since 1970. Several times since then it has severed Hwy 160 requiring closures. It has also disrupted water and gas supply lines for the Town of Pagosa Springs.

The following communities participate in the **National Flood Insurance Program**: Unincorporated Alamosa County and the City of Alamosa. Both communities are also in the **Community Rating System** with a rating of nine. Alamosa County was also in the **Project Impact Program** as part of the San Luis Valley. The Valley entered the program in 2000.

Disaster Declaration History:

1995	State	Flooding
2000	Local	Great Sand Dunes Fire
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow



San Luis Lakes State Park,
Photo reprinted from Colorado State Parks website

ARAPAHOE COUNTY

Arapahoe County shares Denver's south and south-east border. The east and northeast portions of the County are heavily populated. The rest of the County is rural and agriculturally-oriented. Arapahoe County participated in the development of and is included in the **Denver Regional Council of Governments Hazards Mitigation Plan**.

Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified tornados, thunderstorms and associated threats, flooding and drought as the hazards that pose the greatest possible risk.

Thunderstorm/Tornado-Colorado has more thunderstorm days than any other state except Florida. Two hundred and twenty-two hailstorms were recorded between 1952 and 2003. The average hailstone size was calculated at 1.2 inches. Ten injuries and three fatalities were attributed to 12 lightning events reported from 1980 to 2002. Seventy-six tornados have been reported from 1950 to 2001 and 59 high wind events from 1955 through 2003. A tornado in August 2002 caused over \$6 million dollars in property damage.

Flooding-The history of Arapahoe County shows that many floods have occurred within the past 100 years. Between 1997 and 2003 there were 14 recorded flood events. Bear Creek, South Platte River, Plum Creek, and Cherry Creek have all flooded. Several smaller tributaries, including West Bijou Creek and Rattlesnake Creek, have experienced extreme flooding. Through the hazard identification and risk assessment process, the county identified approximately 4,700 households and 350 businesses that have high risk of flooding.

Drought-Major threats to the eastern portion of the County include hazards affecting livestock and crops, making the area very vulnerable to drought. The region has experienced drought for the last four years. 2002 was the driest year on record for the Denver region and much of the State.

Additional Information-There are growing concern about the risks of the wildland/urban interface affecting suburban developments in the County.

Population (2000):	487,967
% Growth from 1990:	24.6%
County Size (square miles):	818
County Seat:	Littleton

Through the hazard identification and risk assessment process the county identified approximately 6,400 households and 600 businesses as having high to very-high risk to wildfire. There are five Class I dams and four Class II dams in the County. All Class I dams have emergency preparedness plans.

The following communities participate in the **National Flood Insurance Program**: Unincorporated Arapahoe County, Aurora, Cherry Hills, Columbine Valley, Deer Trail, Englewood, Greenwood Village, Littleton and Sheridan. According to the **2003 Community Rating System List of Eligible Communities**, Arapahoe County and the cities of Cherry Hills Village, Englewood and Aurora have a community rating of eight and the City of Littleton is rated seven.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

- Update land development regulations and building codes
- Implement/upgrade flood warning systems
- Critical facilities protection



Cherry Creek Dam
Photo reprinted from US Army Corps of Engineers website

ARCHULETA COUNTY

Archuleta County is near the south central border of Colorado and is primarily agricultural. The county has had extraordinary growth in the past decade. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, county emergency management personnel identified winterstorm, drought and flood as the County's most probable exposure to hazard.

Winterstorms-Winterstorms are the county's most frequent hazard. Highway 160 traverses Wolf Creek Pass and threatens travelers with avalanche, icy roads, and white-out conditions. Heavy snow fall and winds can create drifts that close roadways, down utility lines and isolate residents and travelers.

Drought-Drought has occurred in the county almost completely drying up the San Juan River. The lack of water storage with increased population means severe water rationing or worse, in a severe drought situation. The region has experienced drought for the last four years. 2002 was the driest year on record for the region and much of the State.

Flooding-Between 1997 and 2003, three flood events were recorded. Flooding along the Piedra and San Juan Rivers has caused property damage throughout the past century. The Piedra River, by continually changing its course, has caused property damage in several rural areas. In 1911, the San Juan River flooded near Pagosa Springs. Two people were killed and damage was estimated at \$100,000. Other severe floods have been recorded in the County, one in 1911 and the other in 1970, both triggered by thunderstorms. It is estimated that over 75 homes in Archuleta County are located in a 500-year floodplain. The Pagosa Springs region of the San Juan River is classified as a high-risk flood area.

Additional Information-The Colorado State Forest Service estimated that in 1999 there were 57 subdivisions totaling 23,769 acres in the urban/wildland interface. In June 2002, the Missionary Ridge fire burning in La Plata County moved into the northwest corner of Archuleta County and continued burning into the month of July. Several hundreds of acres were consumed by the fire.

Areas along Highway 160 over Wolf Creek Pass are some of the highest hazard landslide and avalanche areas in the State. A historic landslide on Highway 160 at Turkey Creek imperils the highway, Pagosa Springs' water supply line, and a natural gas line.

Population (2000):	9,898
% Growth from 1990:	85.2%
County Size (square miles):	1,364
County Seat:	Pagosa Springs

The following communities participate in the **National Flood Insurance Program**: Unincorporated Archuleta County and the City of Pagosa Springs.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires



Navajo State Park
Photo reprinted from Colorado State Parks website

BACA COUNTY

Baca County is located in the southeast corner of the State. In a risk assessment survey conducted by the Colorado Office of Emergency Management in 2003/4, County emergency management personnel identified exposure to winterstorms, windstorms, wildland fire, extreme heat and hail as the County's most probable exposure to hazard.

Winterstorms-Heavy snow, ice, severe winter storms and blizzards are common to southeastern Colorado. Thirty-seven heavy snow events were reported between 1950 and 2004. Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines, and by causing structural collapse. Repair and snow removal costs can be significant.

Windstorms-Baca County is subject to significant, non-tornadic winds. Fourty-seven high wind events have been recorded between 1950 and 2004. Although these winds may not be life-threatening, they can disrupt daily activities, cause damage to buildings and structures and increase the potential of other hazards. High winds in the winter can cause snow drifts and white-out conditions. A wildfire can be accelerated and rendered unpredictable by high winds. Additionally, 56 tornados have been reported in the county from 1955 to 2003. The largest was an F4 in 1977 causing \$2.5 million in property damage.

Wildland Fire-Causes of wildland fires include lightning strikes, unsupervised controlled burns and accidental fires. Increased drought conditions also contributes to wildland fire.

Extreme Heat-Heat wave is often associated with periods of drought. Drought occurs when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation. Agriculture is the primary economic activity in the area and although drought is not identified as a high hazard, Baca County's economy would be affected by an extensive period of drought.

Hail-Hail forms during thunderstorms and Colorado has more thunderstorm days than any other state except Florida. One hundred and forty-five hail events were reported between 1950 and 2004. The State's high mountains and high elevation increase the likelihood that hail will form in a thunderstorm making Colorado one of the hail capitals of the world.

Population (2000):	4,517
% Growth from 1990:	-0.9%
County Size (square miles):	2,565
County Seat:	Springfield

Additional Information-There is one Class I dam in the County. There is an emergency preparedness plan in place.

Baca County was one of 14 counties included in the 2001 presidential disaster declaration for severe winter storms. Over \$6 million in damages were reported by the plains counties as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

From 1994-2003, six flood events were recorded. The flood events in 1995 resulted in a state declaration and 1997 resulted in a federal declaration. In 1997 Baca County received Public Assistance funds to pay for damage to infrastructure.

The Town of Walsh participates in the **National Flood Insurance Program**.

Disaster Declaration History:

1995	State Disaster	Flooding
1997	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

BENT COUNTY

Bent County is located in the Arkansas Valley of the plains of southeastern Colorado and is primarily agricultural.

Population (2000):	5,998
% Growth from 1990:	18.8%
County Size (square miles):	1,517
County Seat:	Las Animas

Flooding-Between 1994 and 2003, six flood events were reported. Bent County, and specifically Las Animas, has experienced several major flood events since its settlement. After a major flood event in 1921, several potentially damaging flood events were averted in 1936, 1955, 1957 and 1965 by the construction of emergency levees around the town. In 1978, a nine-mile levee was constructed around Las Animas. The levee substantially reduces any flood hazard by the Arkansas River to the City of Las Animas. However the protection of the levee was significantly reduced due to deposition in the river during the 1999 flood. Further deposition is expected to lower the flood protection further. Bent County and the City of Las Animas participate in the **National Flood Insurance Program**.

The County experienced heavy rains and flooding in 1999 that caused damage to infrastructure and crops. The heavy rain led to widespread river flooding, especially along the Arkansas River. Portions of northern La Junta were under 5 to 6 feet of water which damaged or destroyed over 250 homes and businesses. The County was included in the presidential disaster declaration and received Public Assistance and Individual Assistance funding.

Tornados-Severe thunderstorms and tornados are seasonal hazards. Tornado touchdowns have been recorded in or near the Towns of Las Animas, Caddie and Tonnerville. From 1956 to 2003, 30 tornados were reported. From 1950 to 2004, 69 hail events have been recorded. The most significant occurred in 2001 and resulted in over \$9 million dollars in property and crop damage.

Winterstorm-Winterstorms can affect travelers on all roadways in Bent County, including Highways 50 and 101. Thirty-nine heavy snow events have been recorded between 1950 and 2004. Power outages and snow blocked roadways isolate many residents in this rural County. In 1979, Bent County experienced a winterstorm so severe it resulted in a State declared disaster. Due to severe spring snowstorms in April 2001, Bent County was one of 14 counties included in the May 2001 presidential disaster declaration. Over \$6 million in

damages were reported by the plains counties as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

Additional Information- There are two Class I dams located in the County. Both have emergency preparedness plans in place. Because of its agricultural nature the County is vulnerable to drought and hail, which would result in severe economic impact.

Disaster Declaration History:

1979	State	Blizzard
1995	State	Flooding
1997	State	Winter
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	Presidential Disaster	Wildfires

BOULDER COUNTY

Boulder County is located 40 miles northwest of Denver. The area's topography is roughly split between the foothills in the west and plains in the east. Boulder County's hazard identification is included in the **Denver Regional Council of Governments Hazards Mitigation Plan**.

Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified drought, flood, thunderstorms (tornado/hail/lightning), and winter storms as the hazards that pose the greatest risk.

Drought-A prolonged period of drought could adversely affect the agriculture and livestock economy of the area and increase the risk of wildfire. Boulder County has experienced drought for the last four years. 2002 was the driest year on record for the region and much of the State.

Flood-Between 1994 and 2003, three flood events were recorded. In 1997, heavy rain and hail triggered a flash flood which sent a wall of water through the window of the Financial Aid Office at the University of Colorado campus. In all, 10 buildings at CU received water damage causing an estimated \$100,000 in damages. The County's flood mitigation efforts have been in place for many years. Codes and ordinances have been adopted prohibiting or controlling building in floodplains. Mitigation efforts, such as channelization and detention ponds, have been put in place and high-risk buildings located in floodplains have been removed. A flood warning system, made up of stream and rain gauges, is in drainages. These gauges, connected to a computer in the Boulder Regional Communications Center, sound an alarm when significant amounts of rainfall are recorded. Through the hazard identification and risk assessment process, approximately 8,000 households and 240 businesses were identified as having a high to very-high exposure to flood hazard.

Thunderstorms-Severe thunderstorms are identified as a high hazard. Fifty-two thunderstorm and high wind events were recorded between 1957 and 2004. Two months after the Black Tiger wildfire, heavy rain and hail caused a mudslide in Boulder Canyon destroying one home. The same storm caused hail damage in Boulder and Lafayette, a forest fire in Coal Creek Canyon, and power outages in the County. In July 1990, a severe hailstorm caused massive hail damage, localized flooding and rockslides on Highway 119 at the mouth of Boulder Canyon. Between 1955 and 2001, 99 hail storms were

Population (2000):	291,288
% Growth from 1990:	29.3%
County Size (square miles):	750
County Seat:	Boulder

recorded. Between 1980 and 2002, 17 lightning events resulted in 16 injuries and four deaths.

Winterstorms-Winterstorms pose a high risk to residents in the foothills. Significant storms over the past few years include March 1992 (20 inches), March 1990 (24 inches), December 1982 (24 inches), December 1987 (over 24 inches), and March 2003 (over six feet of snow).

Additional Information-In a 1999 report, the Colorado State Forest Service reported that 84 subdivisions, totaling 17,025 acres, were in the urban/wildland interface. Through the hazard identification and risk assessment process 23,700 households and 2,700 businesses were identified as having a high exposure to wildfires in Boulder County. The Boulder County Board of County Commissioners established the Boulder County Wildfire Mitigation Group. The groups' mission is to discuss and coordinate mitigation actions. The Wildfire Hazard Identification and Mitigation System (WHIMS) has proved to be a major breakthrough in mitigation efforts in the County and is being used as a model. Other mitigation measures include promoting FireWise public information campaign, adopting Wildfire Hazard Overlay Zoning Districts, and requiring defensible space, timber fuel reduction, fire resistant building materials, water supplies and improved access in new and existing residential developments. The County participates in the **Emergency Fire Fund**.

There are 23 Class I and 17 Class II dams. The following communities participate in the **NFIP**: Unincorporated Boulder County, Boulder, Lafayette, Longmont, Louisville, Jamestown, Lyons, Nederland and Superior. According to the **2003 Community Rating System List of Eligible Communities**, Boulder County and the cities of Longmont and Boulder each have a community rating of eight, Louisville is rated nine.

Disaster Declaration History:

1989	Local	Wildfire
1990	Local	Wildfire
1994	Local	Flooding
1995	State	Flooding
1998	Local	Wildfire
2000	USDA Disaster	Drought
2001	State	Severe Weather
2002	Presidential Disaster	Wildfire
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

BROOMFIELD CITY/COUNTY

Population (2000):	38,272
% Growth from 1990:	NA
County Size (square miles):	34
County Seat:	Broomfield

Broomfield is a suburb of Denver and is located northwest of the metro area. Broomfield County participated in the development of and is included in the **Denver Regional Council of Governments Hazards Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified drought, thunderstorms and hail as the hazards that pose the greatest possible risk.

Drought-Broomfield has experienced drought for the last four years. 2002 was the driest year on record for the region and much of the State.

Thunderstorm-Severe thunderstorms are identified as a high hazard. Lightning is the most dangerous and frequently encountered weather hazard that most people experience each year. Colorado ranks 11th in the United States in both injuries and deaths caused by lightning.

Hail-Between 1955 and 2001, 12 hail events were recorded in the County.

Additional Information-Broomfield became a County in 2001. Prior to this the City of Broomfield boundaries were spread across four other counties; Adams, Jefferson, Boulder and Weld. Historical hazard statistics are therefore difficult to report.

The hazard identification and risk assessment identified the following:

There are approximately five households and five businesses exposed to flood hazard. Broomfield participates in the **National Flood Insurance Program**.

Disaster Declaration History:

2002 Presidential Disaster Wildfires
2003 Presidential Emergency Snow

CHAFFEE COUNTY

Chaffee County is located near the center of the State. The County is located in a basin surrounded by mountainous terrain and has an economic base of agriculture and outdoor recreational activities. Chaffee County participated in the development of and is included in the **Upper Arkansas Area Council of Governments Hazard Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified wildland fire and drought as the hazards that pose the greatest possible risk.

Drought-The drought of 2002 exposed the vulnerability of the Upper Arkansas Area. By the time summer arrived, the Upper Arkansas River was running well below normal flow levels. The low water, in addition to the nationally publicized drought, caused many people to cancel pre-planned river trips and tourism to the region.

Wildland Fire-With the mountains as a key attraction to the area, a major wildland fire could destroy one of the most important aspects of the region. The entire economy of the region could be literally changed overnight if a wildland fire spread through the area. The Colorado State Forest Service reported that in 1999 there were 70 subdivisions totaling 121,254 acres in the urban/wildland interface. The County participates in the **Emergency Fire Fund**.

Additional Information-Two rivers flow through Chaffee County and are listed as high-risk flood areas: the Arkansas and the South Arkansas. These rivers flow near or through several communities including Buena Vista and Salida. There are also two major creeks that pass through settled areas. Cottonwood Creek goes right through Buena Vista and Chalk Creek passes through the camping area and homes in the Nathrop area. Poncha Creek passes through Poncha Springs.

There are one Class I and two Class II dams located in the County. The high hazard dam does have an emergency preparedness plan in place.

In 2003 and 2004, three deaths occurred as a result of avalanches in the County.

Population (2000):	16,242
% Growth from 1990:	28.1%
County Size (square miles):	1,039
County Seat:	Salida

The following communities participate in the **National Flood Insurance Program**: Chaffee County (unincorporated), the Town of Buena Vista, the Town of Poncha Springs, and the City of Salida.

Potential Mitigation Projects:

- Improve the defensibility of residential and commercial properties against wildfire
- Reduce the fuel load at strategic locations in WUI
- Reduce the vulnerability of municipal water supplies through public education
- Establish a storm water management plan
- Improve early notification capabilities for winter storm events
- Reduce the vulnerability of community assets to flash floods by improving the administration of FEMA flood-hazard areas

Disaster Declaration History:

2002	Presidential	Wildfires
2003	Presidential	Snow Emergency



A Chaffee County fourteeners. Photo by CDEM.

CHEYENNE COUNTY

Cheyenne County is located along the east central border of the State and has a low population density. Cheyenne County participated in the development and is included in the **Northeastern Colorado Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified winter and summer storm exposure as the communities greatest risk.

Severe summer storms- Severe summer storms and their associated risks such as tornadoes and flooding, are considered the primary hazard confronting this County. During the months of May, June, and July, tornadoes and severe thunderstorms are frequent. Tornado touchdowns have been documented near Cheyenne Wells, Kit Carson, Wild Horse, and First View. Forty-four tornadoes have been reported from 1955 to 2003. An F2 tornado caused \$2.5 million dollars property damage in 1979. Seventy-seven high-wind events have been recorded between 1956 and 2004.

Winterstorms-In 1980, Cheyenne County experienced a winter storm so severe it resulted in a state declared disaster. On October 24, 1997, a blizzard hit the County and caused the deaths of many livestock. Travelers on Highways 385, 287, 59, and 40 can become stranded requiring search and rescue efforts. Due to severe spring snowstorms in April 2001, Cheyenne County was one of fourteen counties included in the May 2001 presidential disaster declaration. Over \$6 million in damages were incurred by the plains counties as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

Additional Information-Seven flood events have been reported between 1950 and 2003. Flooding of Wild Horse Creek and Smokey Hill River could occur in the communities of Cheyenne Wells and Kit Carson. The County was included in a presidential flood declaration on August 21, 1997 due to damage caused by heavy rains. The County received Public Assistance funding to repair damages to infrastructure.

Due to its agricultural base, nearly the entire County could be affected by drought. Water shortages could adversely affect irrigation, community water systems, and fire fighting abilities.

Population (2000):	2,231
% Growth from 1990:	-6.9%
County Size (square miles):	1,772
County Seat:	Cheyenne Wells

Grass fires are common along the railroad tracks, wheat fields, and in the prairies. In 2002, the Cheyenne County Complex fire burned 15,000 acres.

Disaster Declaration History:

1965	Presidential	Flooding
1980	State	Blizzard
1997	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

- Become StormReady certified
- Continue promotion of crop insurance
- Provide reverse 9-1-1 education
- Promote enrollment into the NFIP for Kit Carson
- Improve flood plain mapping and promote enrollment into the NFIP for Kit Carson

CLEAR CREEK COUNTY

Clear Creek County is located west of the Denver metro area along the I-70 corridor. The county participated in the development of and is included in the

Denver Regional Council of Governments

Hazards Mitigation Plan. Through the process, using probability and potential impacts for hazards posing the greatest possible risk, the county identified avalanche, drought, flood, hail, landslide, winterstorms and thunderstorms.

Avalanche-Is a natural hazard that is unique to mountainous cities and counties in the region. Several major transportation corridors in Clear Creek County lie within major avalanche path areas. Interstate 70 (I-70), in Clear Creek County, west of Georgetown, places the most individuals and freight haulers at risk. In February 2004, one death was recorded as a result of avalanche near Loveland Pass.

Drought-Clear Creek County has experienced drought for the last four years. 2002 was the driest year on record for the region.

Flooding-Three flood events have been recorded in Clear Creek County between 1994 and 2003. Two creeks within the County are listed as high-risk flood areas: Clear Creek and Tucker Gulch. The mountainous terrain and deep canyons that these creeks flow through enhances the chance of flash flooding, posing an extreme hazard. Virginia Canyon is also a very high risk. In August of 1994, as a result of a flash flood, rock and debris caused the closure of Virginia Canyon Road between Idaho Springs and Central City. In July 1998, torrential rainfall triggered flash floods in Virginia Canyon. Virginia Canyon Road was closed for two days to clear off debris from mudslides. Several cars in Idaho Springs were washed off the road and numerous basements in town were flooded. In July 2004, Virginia Canyon was subjected to flash flooding resulting in minor damage and costly debris removal. Through the hazard identification and risk assessment process approximately 300 households and 100 businesses have been identified as high risk for flooding.

Thunderstorms/Hail-Nine hail events have been recorded between 1971 and 1998. Hail forms during thunderstorms and Colorado is considered one of the hail capitals of the world.

Landslides-Due to steep slopes on the sides of I-70, mudslides and rockfalls are common and have temporarily closed the interstate many times. The Clear Creek Forks landslide area is considered a high priority area and has a history of intermittent, slow

Population (2000):	9,322
% Growth from 1990:	22.4%
County Size (square miles):	394
County Seat:	Georgetown

movement dating back to the mid 1940's. With a well documented history of recent movement, this area is considered a major and potentially very dangerous rockslide area. Interstate 70 east of Hwy 6 is also a rock debris slide area that has been active at least since the I-70 construction about 35 years ago. It has required periodic ongoing roadway cleanup and repair. The Georgetown Incline rockfall area on I-70 is considered an extreme hazard to westbound lands of I-70 on the steep grade between Georgetown and Silver Plume. There are many rockfall events and occasional debris flows onto the roadway each year that have caused damage, injuries and few fatalities over the past several years. Through the hazard identification and risk assessment process 200 households and 10 businesses were identified as having a high risk of landslide.

Winterstorms-Heavy snow, ice, severe winterstorms and blizzards are common to Clear Creek County. Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair and snow removal costs can be significant. During the 2003 blizzard, Clear Creek County received over six feet of snow.



Clear Creek County
Photo by CDEM

Additional Information-Colorado State Forest Service figures show in 1999 there were 22 subdivisions in the urban/wildland interface. There are about 3,500 households and 600 businesses exposed to a high risk of wildfire. The County participates in the **Emergency Fire Fund**. The following communities participate in the **NFIP**: Clear Creek County, Georgetown, Idaho Springs, Silver Plume.

Disaster Declaration History:

1997	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Snow Emergency	

Potential Mitigation Projects:

Floodproofing, Virginia Canyon drainage improvements, Sewer backup protection, Acquisition or relocation, Building elevation

CONEJOS COUNTY

Conejos County is located in the San Luis Valley, in south central Colorado.

Population (2000):	8,400
% Growth from 1990:	12.7%
County Size (square miles):	1,269
County Seat:	Antonito

Flooding-La Jara Creek is the only designated high-risk flood area in Conejos County. Other rivers with a history of flooding include the Alamosa, Conejos, San Antonio, Rio Grande, and the La Jara Rivers. Although not listed as a high-risk area, the Conejos River has caused minor flooding several times; the most recent in 1994 when several residents of Manassa suffered flood damage resulting in \$50,000 in property damage. The high water table aggravates flooding in the area.

There are two Class I dams located in Conejos County, both have emergency preparedness plans in place. In addition, there are two Class II dams.

Winter Storms-Winter storms pose a serious hazard to Conejos County. During the winter of 1993, a severe storm closed most roads and brought emergency response services to a standstill. The rural setting can contribute to isolation of many people during severe storms.

Earthquake-Conejos County is located on the Rio Grande Rift, a fault that stretches from Mexico to Canada. Although only mild earthquakes have been recorded, the possibility of a severe earthquake exists.

Wildfire-Drought increases the risk of wildfire throughout Conejos County. Colorado State Forest Service figures show that in 1999 one subdivision, totaling 200 acres, was identified as being in the urban/wildland interface.

Additional Information-Conejos County entered the **Project Impact Program** with five other counties from the San Luis Valley in 2000. The following communities participate in the **National Flood Insurance Program**: Conejos County (unincorporated areas), the City of Antonito, the City of Manassa, and the Town of La Jara.

Two tornados have been recorded in the County occurring in 1953 and 1990. The 1990 event caused \$25,000 in damages.

Disaster Declaration History:

1993	State	Flooding
1995	State	Flooding
2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

COSTILLA COUNTY

Costilla County is located in the San Luis Valley, in the south central area of the State.

Winterstorm- Like most mountain areas, Costilla County is especially vulnerable to winter storms. Heavy snows can bring a community to a stand still by inhibiting transportation, knocking down utility lines and by causing structural collapse. While residents have adjusted to this threat, visitors and travelers often become stranded and must be rescued.

Flooding-In the spring and summer, storms can cause flooding, high winds and tornados. Residents of Costilla County are especially vulnerable to floods because many of the older communities were built in flood prone areas. A high water table compounds the problem. Many homes are constructed of adobe (adobe bricks turn to mud when exposed to excessive moisture).

Tornado-Five tornadic events have been recorded in the County between 1955 and 1995. Most tornados have been in open-country and have caused minimal damage.

Hail-Four hail events have been recorded in the County. In August 1996, strong winds combined with a great volume of hail produced extensive damage to structures causing \$450,000 in property damage and \$250,000 in crop damage.

Earthquake-Costilla County is located on the Rio Grande Rift and the Rito Seco Fault. A large earthquake could cause serious damage.

Wildfire-The Colorado State Forest Service reported in 1999 there were four subdivisions, totaling 46,000 acres, in the urban/wildland interface. The County participates in the **Emergency Fire Fund**.

Additional Information-There are two Class I dams located within the county. Both have emergency preparedness plans in place. Sanchez Dam developed a large sinkhole in 1992. Mitigation work by the Army Corp of Engineers, the county, and other agencies was successful in stabilizing the dam. The following communities participate in the **National Flood Insurance Program**: Costilla County (unincorporated areas) and the Town of San Luis.

Population (2000):	3,663
% Growth from 1990:	14.8%
County Size (square miles):	1,215
County Seat:	San Luis

Conejos County entered the **Project Impact Program** with five other counties from the San Luis Valley in 2000. A mitigation project was completed to protect a historic adobe structure from being destroyed by water.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow



Scenes of San Luis. Photos by CDEM

CROWLEY COUNTY

Crowley County is located in the southeast region of the State. This is a sparsely populated area that lacks basic services and shelter for stranded motorists. This often necessitates search and rescue efforts and sheltering/medical assistance for victims.

Winter Storms-The rural setting of the county contributes to problems from winter storms. Thirty-one heavy snow events have occurred between 1993 and 2004. Travelers along Highways 96 and 71 are often affected by storm conditions. An extensive blizzard on October 24, 1997 killed livestock and caused property damage. Due to severe spring snowstorms in April 2001, Crowley County was one of 14 counties included in the May 2001 presidential disaster declaration. The plains counties incurred over \$6 million dollars in property and crop damages as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

Flooding-Between 1995 and 2004, four flood events were recorded in the County. Crowley County was included in another presidential disaster declaration in 1999, due to heavy rains and flooding. The County suffered damage to infrastructure and received Public Assistance funds to help with recovery efforts. The county successfully competed for hazard mitigation funds and has floodproofed a public building.

There are no Class I dams located in the County. There are two Class II dams.

Tornados-Tornados occur in and around Olney Springs and Ordway. Fourteen tornados were reported between 1951 and 2003.

Population (2000 census):	5,518
% Growth from 1990:	39.8%
County Size (square miles):	803
County Seat:	Ordway

Thunderstorm/Hail-Thirty three thunderstorms and high wind events occurred between 1955 and 2003. Thirty-two hail events occurred between 1961 and 2002.

Additional Information-The following communities participate in the **National Flood Insurance Program**: the City of Crowley and the Town of Ordway.

Disaster Declaration History:

1997	State	Blizzard
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2001	Presidential Disaster	Winter Storms
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires



Floodproofed Historic Building

Photo by CDEM

CUSTER COUNTY

Custer County is located in the south central region of the State. The area is extremely diverse with mountain peaks rising above 14,000 feet to the valley floor dropping to 5,000 feet. Custer County participated in the development of and is included in the **Upper Arkansas Area Council of Governments Hazard Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified wildland fire, flood, and drought as the hazards that pose the greatest possible risk.

Flooding-Three flood events were recorded in Custer County between 1998 and 2003. A flash flood in July 2003, flooded a health clinic in Westcliffe (considered a critical facility because it is the only health care facility in the area). Water up to one foot depth was reported in roadways in Westcliffe and Silver Cliff. The event caused \$20,000 in property damage. The County experienced heavy rains in 1999 and was included in a presidential disaster declaration. The County received Public Assistance funds to pay for damaged infrastructure due to flooding.

The section of Grape Creek flowing through the town of Westcliffe is the only designated high-risk flood area in Custer County. This does not mean that flooding could not, or has not, occurred in other creeks and drainages. In 2003 the Board of County Commissioners for Custer County passed a resolution to participate in the National Flood Insurance Program. There is one class I dam.

Wildfire-In Custer County, six to 12 wildfires occur each year, mostly on Bureau of Land Management or National Forest Service land. The Colorado State Forest Service determined in 1999 that there were 37 subdivisions, totaling 25,000 acres, in the urban/wildland interface. In 2002, the Cuerno Verde fire consumed approximately 400 acres, including two homes. It cost approximately \$500,000 to fight the fire. The County participates in the **Emergency Fire Fund**.

Drought-The risk of drought is homogeneous across the Upper Arkansas Area. The County has experienced drought for the last four years. 2002 was the driest year on record for the region and much of the State. The 2002 drought had a severe economic impact on the area.

Population (2000 census):	3,503
% Growth from 1990:	81.9%
County Size (square miles):	737
County Seat:	Westcliffe

Additional Information-The relative isolation and mountainous topography of Custer County presents problems during severe winter storms. There are only three roads in and out of the County and their closure could isolate the County from emergency response support, as well as shipments of needed supplies.

Disaster Declaration History:

1999	Presidential Disaster - Flooding, Mudslides, Landslides
2000	USDA Disaster Drought
2002	Presidential Disaster Wildfires
2003	Presidential Emergency Snow



Custer County

Photo by CDEM

Potential Mitigation Projects:

- Critical facility protection (floodproofing), including the medical clinic
- Improve the defensibility of residential and commercial properties against wildfire
- Reduce the fuel load at strategic locations in WUI
- Reduce the vulnerability of municipal water supplies through public education
- Establish a storm water management plan
- Improve early notification capabilities for winter storm events
- Reduce the vulnerability of community assets to flash floods by improving the administration of FEMA flood-hazard areas

DELTA COUNTY

Population (2000 census):	27,834
% Growth from 1990:	32.7%
County Size (square miles):	1,157
County Seat:	Delta

Delta County is located in the western region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified exposure to winterstorms, windstorms, wildland fire, extreme heat and hail as the County's most probable exposure to hazard.

Winterstorms-Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair and snow removal costs can be significant.

Windstorms-Delta County is subject to significant, but non-tornadic winds, eight between 1993 and 2002. Although these winds may not be life threatening, they can disrupt daily activities, cause damage to buildings and structures, and increase the potential of other hazards such as wildfire.

Wildfire-The number of homes being built in the urban/rural interface is increasing dramatically. The Colorado State Forest Service reports in 1990 there were seven subdivisions totaling 108 acres in the urban/wildland interface. The Wake Fire (1994) near Paonia burned over 3,900 acres and destroyed three homes. Wildfires in 1997 and 1999 also caused significant damage. The county participates in the **Emergency Fire Fund**.

Extreme Heat-Heat wave is often associated with drought. A heat wave associated with a drought is a very dangerous situation. Delta County has experienced drought for the last 4 years. 2002 was the driest year on record for the region and much of the State.

Flooding-Between 1998 and 2003, five flood events causing approximately \$1.4 million dollars in property damage and over \$200,000 in crop damage have been recorded. Somerset and Paonia are at high risk for flooding from the North Fork of the Gunnison River. The following communities participate in the **National Flood Insurance Program**: Delta County (unincorporated areas), City of Delta, Town of Cedaredge, Town of Hotchkiss, Orchard City, and the Town of Paonia.

Hail-Seven Hail events have occurred between 1993 and 2003. Hail storms in 1993 and 1994 resulted in \$100,000 in crop damage.

Landslide-The North Fork of Gunnison River landslide area has been designated as a high priority area by the USGS. The corridor has a history of serious and frequent landslide problems along its entire length. The areas include the Towns of Hotchkiss, Paonia and Somerset and several coal mines and their facilities. Hwy 133 and the Union Pacific Railroad serve the area and are at risk. The aggregate annual cost of direct landslide losses and excess maintenance in this hazard corridor is estimated to be at least \$1 million dollars.

Additional Information:

There are 17 Class I and 14 Class II dams located in the County and nearly 200 reservoirs are located on Grand Mesa. Many date prior to 1900. All Class I dams have emergency preparedness plans in place. According to the October 1, 2003 **Community Rating System List of Eligible Communities** the City of Delta has a community rating of seven in the program.

Delta entered the **Project Impact Program** in 2000. Delta has also received a **Storm Ready** designation from the National Weather Service.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
1993	State	Flooding
1994	Fire Suppression	Wildfire
1995	State	Flooding
1998	Local	Dam Failure
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

Mitigation Projects:

In 2004, the City of Delta successfully applied for and received a Hazard Mitigation Grant for a dredging and cribbing replacement project that will protect the City's wastewater plant from physical damage and prevent contamination during periods of flooding.

Potential Mitigation Projects:

Flood inundation study
Flood warning response plan for the City of Delta and surrounding areas.

DENVER CITY/COUNTY

Denver is located in the central and eastern portion of the State and lies in the great plains with elevations between 4,500 and 6,500 feet. Denver County participated in the development of and is included in the **Denver Regional Council of Governments Hazards Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the county identified drought, flood, and thunderstorms with their associated risks, as the hazards that pose the greatest possible risk.

Drought-There are several ways to look at the various aspects of drought and its impact in the Denver region. A study conducted by the Department of Atmospheric Science at Colorado State University (CSU) documented the dry periods for the State as being: 1893-1905, 1931-1941, 1951-1957, 1963, 1965, and 1975-1978. Since the CSU report was published the Denver region has experienced severe and record drought. The region has experienced drought for the last four years. 2002 was the driest year on record for Denver and much of the state.

Flooding-Thirteen flood events have been recorded between 1993 and 2003. Through the hazard identification and risk assessment process 3,600 households and 1,200 businesses were identified as having a high risk of flooding.

Thunderstorms (hail/lightning/tornado)-Thunderstorms, heavy rains, hail and tornados threaten Denver. In the Colorado Front Range corridor tornados have been reported nine months of the year. Twenty tornado touchdowns were recorded in the City from 1950 to 2003. A severe hailstorm in 1990 resulted in over \$625 million in damages. One hundred thirty-two hail events between 1955 and 2001 have been recorded.

Winterstorms-Winterstorms can paralyze the area. The disruption of the urban system caused by heavy snow can have economic consequences as well. The blizzard in March 2003 caused major disruptions and economic losses.

Population (2000 census):	554,636
% Growth from 1990:	18.6%
County Size (square miles):	155
County Seat:	Denver

Additional Information-There are seven Class I and three Class II dams in Denver. All Class I dams have emergency action plans in place. Denver participates in the **National Flood Insurance Program**. According to the 2003 **Community Rating System Eligible Communities List**, Denver has a rating of nine. Denver Water Board participates in the **Emergency Fire Fund**.

Disaster Declaration History:

1967	Local	Earthquake
1968	Local	Severe Weather
1998	Local	Severe Weather
2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

Adoption/revision of building codes and development regulations
Develop inventories of at-risk structures to prioritize mitigation projects
Channel modifications
GIS mapping updates

DOLORES COUNTY

Population (2000 census):	1,844
% Growth from 1990:	22.6%
County Size (square miles):	1,028
County Seat:	Dove Creek

Dolores County is located in the southwest part of the State on the Utah border in the transition area from high desert mesas to the high mountains of the Rockies. Dolores County participated in the development of and is included in the **Dolores County Pre-Disaster Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified windstorms, floods, winterstorms, drought, wildfire, land subsidence, landslides and avalanche as the hazards that pose the greatest possible risk. The worst hazard events experienced in Dolores County were flooding resulting from heavy rains and snowmelt.

Windstorm-Dolores County has experienced high windstorms not associated with tornadic events. The County has experienced two high wind events in the last five years.

Flooding-Flooding is arguably the highest priority natural hazard in Dolores County. This is largely due to the physical geography of the County, which includes the Dolores River and creeks as well as varied topography. The Dolores River, a designated high risk in the area of Rico, has a history of flooding. The following communities participate in the **National Flood Insurance Program**: Dolores County (unincorporated areas), City of Dove Creek, and the Town of Rico.

Winterstorm-Severe winter storms are more common in the eastern end of the County due to the high elevation, which significantly increases snowfall and colder temperatures reduce snow melt.

Drought-Dolores County has, like much of the rest of the State, experienced drought for the last 4 years and is in an extreme drought currently. Because much of the County is dominated by agriculture, a severe economic impact could occur as the result of continued drought.

Wildfire-The Colorado State Forest Service reports in 1999 there were eight subdivisions, comprising 800 acres, in the urban/wildland interface. Areas of the County that are especially susceptible to wild fire are the south flanks of the mountains that are exposed to intense sun and daily warm rising thermal winds. The County participates in the **Emergency Fire Fund**.

Landslide-According to USGS data, the northeastern corner of Dolores County, including the Rico area, is considered a high landslide risk with slopes in the 30% to 90% range. The County areas along the upper Dolores River and the Rico to Dunton road, fall in the medium landslide risk category. The Dunton road to Rico is of special concern due to soil type and steep grades.

Subsidence-In Dolores County the presence of abandoned mine shafts and ground water sources increases the possibility of land subsidence. Areas that are potentially susceptible are located under the entire town of Rico an surrounding area.

Avalanche- Six avalanche deaths occurred in the County in 2003 due to avalanche. Avalanche areas have been identified as a part of Rico's zoning ordinance. These avalanche areas do not currently put the Town at risk, but are a hazard to recreational activities. Approximately 25 properties, homes, and businesses lie in the identified avalanche chute and out run areas.

Additional Information-There is one Class I dam and two Class II dams located in the County. The Class I dam has an emergency action preparedness plan in place.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2002	USDA Disaster	Drought
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

Potential Mitigation Projects:

Develop inventories of at-risk buildings, infrastructure and properties and prioritize mitigation projects accordingly
Develop, enhance and implement education programs targeted to mitigating natural hazards
Update/revise floodplain maps
Construct a storm drain system to protect Dove Creek water mains
Conduct studies to develop flood plain maps for Silver Creek and other flood prone areas in Rico
Revise floodplain development regulations
Acquisition of floodplain properties
Redesign and rebuild Rico storm drain system
Forest thinning
Map existing mine shafts under the Town of Rico

DOUGLAS COUNTY

Douglas County, located south of Denver, is the fastest growing county in the state. Douglas County participated in the development of and is included in the **Denver Regional Council of Governments Hazards Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the county identified drought, flood, thunderstorms (hail/tornado), winterstorms, landslides and wildland fire as the hazards that pose the greatest possible risk.

Drought-Some communities and many individuals in Douglas County rely on wells. Drought can result in everything from crop failure to lack of water for fire fighting. The county has experienced drought for the last four years. 2002 was the driest year on record.

Flood-Thirteen flood events have been recorded in Douglas County between 1993 and 2003. It is estimated that approximately 2,600 households and 200 businesses are at high risk of flood hazard. The following communities participate in the **National Flood Insurance Program**: Douglas County (unincorporated areas), and the Towns of Castle Rock, Larkspur and Parker. According to the October 1, **2003 Community Rating System List of Eligible Communities**, Douglas County has a community rating of nine. The Town of Parker has a rating of seven.

Thunderstorms-In Douglas County, a number of funnel clouds are sighted each year. Several have touched down, but have caused little damage. From 1950 to 1998, 49 tornados have been reported. increase. Between 1961 and 2001, 135 hail events were recorded.

Winterstorms-Between 1993 and 2004, 59 heavy snow events have occurred in the County. Power failures and drifting snow can isolate many people. Travelers on I-25 may become snowbound and require search and rescue efforts. Repair, snow removal and rescue costs can be significant.

Landslides-Certain steep sided mesas of the county, starting south of Castle Rock and extending to the El Paso County line, are subject to extremely hazardous debris avalanches and debris flow. Occurrences are sporadic and unpredictable, but are potentially very dangerous. Areas that have experienced major wildland fires denuding the slopes of vegetation are particularly vulnerable.

Population (2000 census):	175,766
% Growth from 1990:	191.0%
County Size (square miles):	843
County Seat:	Castle Rock

Wildfire-According to the Colorado State Forest Service, in 1999 there were 232 subdivisions, totaling 109,000 acres, in the urban/wildland interface area. Through the hazard identification and risk assessment process the County identified 25,600 households and 2,100 businesses who are at a high to very-high risk of wildfire. Douglas County has instituted mitigation measures for wildfire. These include promoting the Fire Wise public information campaign, adopting Wildfire Hazard Area Overlay Zoning Districts, requiring defensible space, timber fuel reduction, fire resistant building materials, water supplies and improved access in new and existing residential developments. The County participates in the **Emergency Fire Fund**. Perry Park is recognized as a **Fire Wise Community**.

Additional Information -There are two Class I dams and six Class II dams located in the County.

Disaster Declaration History:

1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

- GIS updates
- Continued wildland fuel management
- Flood warning systems



Castlewood Canyon State Park
Photo by Colorado State Parks website

EAGLE COUNTY

Eagle County is located in the western region of the State and its topography is primarily mountainous.

Population (2000 census):	41,659
% Growth from 1990:	90.0%
County Size (square miles):	1,685
County Seat:	Eagle

Landslide-Landslides are a significant problem in Eagle County. The Vail area has over 20 locations designated as high hazard earthflow areas. In 1984, six major earthflows occurred affecting the town and private property. Another area of concern is the Dowds Junction landslide at the intersection of I-70 and U.S. Highways 6 and 24. Landslides threaten the highways and could dam the Eagle River causing flooding and blocking the Denver and Rio Grande Railroad.

Additional Information-There are six Class I and four Class II dams.

The County participates in the Emergency Fire Fund. The Colorado State Forest Service reports in 1999 there were 205 subdivisions totaling 14,500 acres in the urban/wildland interface.

During the late 1970s and early 1980s, several slides caused road blockages on I-70 and U.S. 6. Meadow Mountain Slide, between Minturn and Dowds Junction, has been moving for at least 35 years and caused considerable damage to Highway 6 in 1984. That same year, a slide covered the D&RG Railroad tracks near Minturn. Historical slide areas threaten the Town of Red Cliff. In 1984, a flow damaged several homes and required the removal of three feet of mud and debris from County Road P-293. Additional areas threatened by landslides are Shrine Pass, Basalt, Sweetwater, and Beaver Creek.

Disaster Declaration History:
2000 USDA Disaster Drought

Flooding-Brush Creek and Eagle River are listed as high-risk drainages threatening the Town of Eagle. Eagle River also threatens Red Cliff and Minturn. Gore Creek, another high-risk drainage, flows through the Vail Valley. Eagle County was included in the presidential disaster declaration for the 1984 flooding. Throughout the season, many structures in Red Cliff were partially flooded even though the town sandbagged extensively. Flooding damaged sanitation facilities and took out several bridges. In Vail, flooding and landslides damaged buildings and roads forcing evacuations. The following participate in the **National Flood Insurance Program**: Eagle County (unincorporated areas), Avon, Basalt, Gypsum, Redcliff, Town of Eagle, and Vail.



Earthquake-Several earthquakes with small magnitudes have been recorded in the county including one in Gilman (1957). The county is located over several faults and if movement were to occur, considerable damage could result.



Shrine Pass Area

Photos by David C. Marlin

Winterstorm-As with all mountain regions, Eagle County is vulnerable to severe winter storms. Excessive snow can result in power outages and blocked roadways.

ELBERT COUNTY

Elbert County is located in the north and central region of the State and is rural in nature, however the population of the County has increased dramatically over the last decade. Elbert County participated in the development of and is included in the **North-east Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the county identified , flood, winterstorms and drought as the hazards that pose the greatest possible risk.

Flood-Between 1997 and 2003, six flood events were recorded in Elbert County. There are two major areas of concern regarding flooding: Running Creek in Elizabeth and Kiowa Creek in Kiowa. In 1935, a major flood on Kiowa Creek substantially damaged the Town of Kiowa and its bridges. In August 1997 and May 1999, the County was affected by widespread rainstorms and flooding. In both years the County was included in presidential disaster declarations due to damage to public infrastructure.

Winterstorm-Like most counties located on Colorado’s eastern plains, residents of Elbert County are subject to severe winter storms. Between 1993 and 2004, eleven heavy snow events occurred. Road closures, power outages, and livestock loss are all familiar to the County’s residents.

Drought-The hazard identification research showed that Elbert County has experienced 4 years of drought. 2002 was the driest year on record for the region and much of the State. Because of its agricultural nature, Elbert County would suffer economic impact as a result of a severe and continued drought.

Additional Information-Like most counties located on Colorado’s eastern plains, Elbert County is subject to high, but non-tornadic winds. Although these winds may not be life threatening, they can disrupt daily activities, cause damage to buildings and structures, and increase the potential of other hazards such as grass fires.

There are heavily wooded and large grass areas in the County. Both have the potential for wildfire, especially during a dry season. Colorado State Forest Service figures show in 1999 there were 52 subdivisions, totaling 29,445 acres, in the urban/wildland interface.

Population (2000 census):	19,872
% Growth from 1990:	106.0%
County Size (square miles):	1,865
County Seat:	Kiowa

The Town of Kiowa participates in the **National Flood Insurance Program**.

Disaster Declaration History:

1965 Presidential Disaster	Flooding
1967 Presidential Disaster	Flooding
1997 Presidential Disaster	Flooding
1999 Presidential Disaster	Flooding, Mudslides, Landslides
2002 USDA Disaster	Drought
2002 Presidential Disaster	Wildfires
2003 Presidential Emergency	Snow

Potential Mitigation Projects:

- Research enrollment into the NFIP
- Become Storm Ready certified
- Become a Fire Wise community
- Floodproof schools in the floodplain in Kiowa
- Apply to CWCB and FEMA for revised flood plain maps

EL PASO COUNTY

El Paso County is located in the central region. Terrain ranges from plains to mountains. Most residents live in the Colorado Springs metropolitan area. El Paso County is currently in the process of developing their Hazard Mitigation Plan. **Colorado Springs** has already developed a hazard mitigation plan. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, county emergency management personnel identified exposure to winterstorms, wildfire, and thunderstorms (hail/lightning), as the County's most probable exposure to hazard.

Winterstorms-Annual snowfall ranges from 120 inches in the mountainous northwest portion of the county to less than 40 inches in the southeast. Snowstorms, accompanied by high winds and freezing temperatures, cause roadway closures several times a year. This isolates many people until the roads are reopened. In October 1997 the County experienced a blizzard resulting in four deaths and stranded motorists. A 1987 snowstorm closed the airport, businesses and schools, downed power lines, and killed livestock. It is estimated this storm cost the City of Colorado Springs over \$575,000. In April 2001 spring snowstorms caused power outages in the eastern part of the county. Damages were estimated at approximately \$500,000.

Wildfire-Wildfires occur yearly and potential increases with drought conditions. Types of fires range from timber fires in the west to grass fires in the east. The Colorado State Forest Service reports in 1999 there were 87 subdivisions totaling 42,076 acres in the urban/wildland interface. The county participates in the **Emergency Fire Fund**. In 2003, El Paso County successfully applied for and received an HMGP grant for a wildfire fuel reduction project.

Thunderstorm/Tornado- One hundred twenty-one thunderstorms were reported between 1965 and 2004. Severe thunderstorms in this area also spawn tornados. Sixty-five tornados have been reported from 1950 to 1998. Several have touched down in populated areas including Manitou Springs (1979) and Green Mountain Falls (1985). On May 28, 2001, severe thunderstorms struck the Front Range and eastern plains of Colorado during the afternoon and evening. A tornado hit the town of Ellicott, damaging mobile homes and a school. Damages were estimated at over \$6 million and 19 people were injured. The Fire and School Districts applied for and received a hazard mitigation grant and have constructed a community tornado shelter. In 2002, high winds (64mph) caused over \$100,000 in damages to a mobile home community.

Population (2000 census):	516,929
% Growth from 1990:	30.2%
County Size (square miles):	2,158
County Seat:	Colorado Springs

Landslide-Many landslides occurred in Colorado Springs during the spring of 1995 following a winter of very heavy snowfall. In 1999, the county experienced heavy rains, triggering mudslides, landslides, and flooding and as a result was included in a presidential disaster declaration. Colorado Springs and Manitou Springs successfully applied for mitigation funds to acquire and demolish private homes destroyed by landslides. Four homes were acquired in Manitou Springs and 28 in Colorado Springs. The properties were converted to and will be maintained as open spaces. The Manitou Springs rockfall area is becoming more severe with construction of new homes and facilities in the steep tributary valleys and other sideslope areas.

Flooding-There are 19 drainage basins in El Paso County; all are subject to flooding. Flooding is an annual problem in Colorado Springs and Manitou Springs. Fountain Creek is located in an area susceptible to heavy thunderstorms and is often subject to flash flooding. A warning system is in place on Fountain and Monument Creeks to provide advance warning of flash floods. El Paso County, Calhan, Colorado Springs, Fountain, Green Mountain Falls, Manitou Springs, Monument, Palmer Lake, and Ramah participate in the **NFIP**. There are 11 Class I and 17 Class II dams.

Additional Information-In 2001, the County experienced a magnitude 3.1 earthquake; the epicenter was located 20 miles northwest of Colorado Springs. El Paso County entered the **Project Impact Program** in 2001. El Paso County, Green Mountain Falls, Manitou Springs, Monument, Palmer Lake, Fountain, and Colorado Springs are in the CRS program.

Disaster Declaration History:

1989	Local	Wildfire
1990	State	Tornado
1993	Local	Flooding
1995	Local	Wildfire
1995	State	Flooding/Landslides
1997	State	Snow Emergency
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	Presidential Disaster	Severe Weather
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

FREMONT COUNTY

Fremont County is located in the central area of the State. Fremont County participated in the development of and is included in the **Upper Arkansas Area Council of Governments Pre-Disaster Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified wildland fire, flood, and drought as the hazards that pose the greatest possible risk.

Wildfire-Colorado State Forest Service figures show in 1990 there were 57 subdivisions, totaling 38,000 acres, in the urban/wildland interface. In 2002, the Iron Mountain fire burned approximately 4,436 acres of private and Bureau of Land Management (BLM) land. Around 200 structures, of which 100 were homes, were consumed by the fire. Suppression costs exceeded \$1.5 million dollars. The County participates in the **Emergency Fire Fund**.

Flood-Fifteen floods between 1994 and 2001 occurred in the County. The Arkansas River, near Florence, Cañon City, and Parkdale, has overflowed many times and is listed as a high-risk flood area. Cañon City has severe problems nearly every year caused by high water tables, spring snowmelt, rainstorms and an inadequate storm drainage system. Grape Creek drainage in the Cañon City area is also listed as a high-risk flood area; floods occurred in 1991 and 1994. In 1994, damage was in excess of \$400,000. Although there were no deaths or injuries, property damage has been extensive in areas of northeast Cañon City. A 1996 flash flood caused \$800,000 in damage and a 1999 flood resulted in over \$4 million in damage and a presidential disaster declaration. The County received Public Assistance funding to assist with recovery efforts.

To reduce recovery costs associated with flooding, Cañon City has enacted many mitigation measures. The City successfully applied for hazard mitigation funds and has built detention ponds. Other measures include identification of flood prone areas, appropriate flood control structures, and development regulations. A flood mitigation work plan, which includes an emergency response plan and maintenance of existing drainage systems, has been prepared. Development in the floodplains happens only under the strictest of supervision. The following communities participate in the **National Flood Insurance Program**: Fremont County (unincorporated areas), Cañon City, Florence, and Rockvale.

Population (2000 census):	46,145
% Growth from 1990:	43.0%
County Size:	1,562
County Seat:	Cañon City

Drought-The incidence and severity of the drought hazard is cyclic, but tends to be static over large periods of time. The vulnerability of Fremont County community assets to drought, is tending to increase through time as the demand for the limited raw water resources go up.

Winterstorm-Fremont County is threatened annually by severe winterstorms. Winterstorms isolate residents and communities due to road closures and utility outages.

Additional Information- According to the October 1, 2003 **Community Rating System List of Eligible Communities**, Fremont County and the City of Canon City have a community rating of nine. There are four Class I and three Class II dams in the County. All Class I dams have emergency preparedness plans in place.

Disaster Declaration History:

1999	Presidential Disaster	Flooding, Mudslides, Landslides
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

Improve the defensibility of residential and commercial properties against wildfire
Reduce the fuel load at strategic locations in WUI
Reduce the vulnerability of municipal water supplies through public education
Establish a storm water management plan
Improve early notification capabilities for winter storm events
Reduce the vulnerability of community assets to flash floods by improving the administration of FEMA flood-hazard areas

GARFIELD COUNTY

Garfield County is located in the northwest region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified exposure to flood, wildland fire and landslide as the County's most probable exposure to hazard.

Flood-Twenty-one flood events have occurred between 1993 and 2004, resulting in over \$1.6 million in damage. The County's high-risk flood drainages are in the New Castle area along the Colorado River, Elk and Canyon Creeks, and in the Grand Valley along the Colorado River from Rulison to the county line. Roaring Fork River is listed as a high risk to Glenwood Springs along Highway 82 from the southeast to the point where it joins the Colorado River. Rifle Creek flooded Rifle several times during the past century including in 1992 during the spring runoff season when a stationary thunderstorm caused flash flooding that destroyed three residences and damaged several more. As a result, a greenbelt was developed in the floodplain. A flood on Parachute Creek would flood Parachute and residences out of town. Rifle, Silt, unincorporated Garfield County, Carbondale, Glenwood Springs, New Castle, and Parachute participate in the **National Flood Insurance Program**.

Wildfire-Wildfire danger has intensified in recent years as more people move into the urban/wildland interface. Fifteen wildland fires occurred between 1998 and 2003 and caused over \$6 million dollars in damages. Colorado State Forest Service reports in 1990 there were 103 subdivisions, totaling 7,091 acres, in the interface. Wildfires in 2002 consumed over 26,000 acres in Garfield County. The County participates in the **Emergency Fire Fund**.

Landslide-Historically, Douglas Pass-Baxter Pass landslide and debris flow areas is one of the most active landslide areas of Colorado. During some years landslides are so active that the entire terrain can change within the period of a year and highways have been closed for months at a time. Affected facilities include Hwy 139, a Garfield County road and numerous energy related pipe lines. Landslides are a constant risk in Glenwood Springs as the central business district and several residential districts are built on a debris fan. In 1986, the County declared a financial disaster due to damage caused by landslides.

Population (2000 census): 43,791
% Growth From 1990: 46.1%
County Size (square miles): 2,994
County Seat: Glenwood Springs

Earthquake-In 1982, 19 small earthquakes were recorded in the Carbondale area. In August 2001, a 4.0 earthquake was recorded five miles northwest of Glenwood Springs.

Additional Information-There are six Class I and seven Class II dams in the County.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
1994	Local	Fire
1993	State	Flooding
1998	Local	Landslide
2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfire



Rifle Falls State Park
Photo on Colorado State Parks website

GILPIN COUNTY

Gilpin County is located in the northcentral region of the State. Gilpin County hazard identification is included in the **Denver Regional Council of Governments Hazards Mitigation Plan.**

Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the county identified avalanche, drought, flood, winterstorms, thunderstorms with their associated risks, and wildland fire as the hazards that pose the greatest possible risk.

Avalanche-An avalanche is a mass of snow, ice, and debris flowing and sliding rapidly down a steep slope. Gilpin County has conditions that are conducive to avalanche and avalanches have occurred during the winter as the result of heavy snow accumulations on steep slopes.

Drought-Drought occurs when a long period passes without substantial rainfall. Gilpin County has experienced drought for the last 4 years. 2002 was the driest year on record for the region and much of the State.

Flood-The County has many areas at risk of flash flooding along its steep creeks and drainages, but only South Boulder Creek is listed as a high risk (affecting the areas of Rollinsville, Lincoln Hills, and Pinecliff). In 1998, heavy rain triggered a mudslide in Blackhawk. The mudslide blocked main street and caused an estimated \$500,000 in damage to a local casino. The following communities participate in the **National Flood Insurance Program:** Gilpin County (unincorporated) and the Cities of Black Hawk and Central City.

Winterstorm- Winterstorms can cause road closures and strand motorists (many on Highway 119). Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair, removal and rescue costs can be significant.

Thunderstorm-Hail forms during thunderstorms, and Colorado has more thunderstorm days than any other state except Florida. The State's high mountains and high elevation increase the likelihood that hail will form in a thunderstorm, making Colorado one of the hail capitals of the world.

Population (2000 census):	4,757
% Growth from 1990:	55.0%
County Size (square miles):	149
County Seat:	Central City

Wildfire-With growing numbers of people moving into the urban/wildland interface, and the numbers of people recreating in the back country rising, the risk for human-caused fire will also rise. Colorado State Forest Service figures show in 1999 there were 9 subdivisions, totaling 7,680 acres, in the urban/wildland interface area. Through the hazard identification and risk assessment process approximately 1,500 households and 200 businesses have been identified as having a high risk of exposure to wildfire. The County participates in the **Emergency Fire Fund.** Structural fires are a hazard in Central City and Black Hawk due to the many old buildings in the area.

Additional Information-Abandoned and/or inactive mines are abundant in Gilpin County, especially in historical districts now turned gaming districts of Black Hawk and Central City. While State and Federal agencies are currently working to close such mines (a costly and generally time consuming endeavor), the number of mines remaining open to date is staggering. The hazards abandoned mines create to both humans and livestock is quite significant, and should not be underestimated. There is only one Class I dam in the County and no Class II dams. The Class I dam has an emergency preparedness plan in place.

Disaster Declaration History:

1995	State	Flood/Landslide
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

GRAND COUNTY

Grand County is located in the northcentral region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified exposure to winterstorms, wildland fire, avalanche and lightning as the County's most probable exposure to hazard.

Winterstorms-Heavy snow, ice, severe winter storms and blizzards are common in Grand County. One hundred and eighty one heavy snow events were recorded between 1993 and 2004. Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair and removal costs can be significant.

Wildfire-The Colorado State Forest Service reports in 1999 there were 276 subdivisions, totaling 13,900 acres, in the urban/wildland interface. The County participates in the **Emergency Fire Fund**.

Avalanche-An avalanche is a mass of snow, ice, and debris flowing and sliding rapidly down a steep slope. Grand County has conditions that are conducive to avalanche and avalanches have occurred during the winter as the result of heavy snow accumulations on steep slopes. An avalanche in 1995 killed two people, destroyed a home and caused extensive damage to property.

Lightning-Lightning is Colorado's most dangerous weather hazard. Colorado ranks 11th in the United States in both injuries and death caused by lightning. Lightning ignited wildland fires are the primary concern.

Additional Information-There are nine Class I and nine Class II dams located in the County. All of the Class I dams have emergency preparedness plans in place.

The following communities participate in the **National Flood Insurance Program**: Fraser, Winter Park, and Grand Lake.

Population (2000 census): 12,442
% Growth from 1990: 56.2%
County Size (square miles): 1,840
County Seat: Hot Sulphur Springs

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow



Kemp-Breeze State Wildlife Area
Photo by Pete Walker, DNR

GUNNISON COUNTY

Gunnison County sits just west of the Continental Divide and is located in the southwestern region of the State approximately 200 miles from Denver. Gunnison County participated in the development of and is included in the **Gunnison County All Hazard Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified wildland fire, drought, winterstorms and landslides as the hazards that pose the greatest possible risk.

Wildfire-According to the Colorado State Forest Service, in 1999 there were 122 subdivisions in the urban/ wildland interface. The county participates in the **Emergency Fire Fund**.

Drought-Although the temperatures are not conducive to growing produce, the valley does produce a lot of hay which relies heavily on water availability. Gunnison County is now going on four years of drought.

Winterstorm-Historically Gunnison County is one of the coldest places in the Nation, with winter temperatures reaching down to -30 to -40, and has temperatures in the low 30 degree range on summer nights. It is estimated that a power loss of over six hours would result in freezing of water and sewer lines to more than 50% of the population. One death was recorded in 2002 as the result of an avalanche.

Landslide-There are three major areas in Gunnison County that are considered to be conducive to landslide activity. 1) The Black Mesa landslide, earthflow and rockfall corridor of Gunnison and Montrose counties, 2) the Highway 92 corridor on the north rim of Black Canyon is unsafe much of the time because of minimal design and numerous landslide, debris flow and rockfall areas, and 3) the Red Creek landslide area along US Highway 50 on the north shore of the Blue Mesa Reservoir. This landslide area has been the most persistent and troublesome, causing serious periodic closures and repairs of Highway 50.

Additional Information-Flooding-Gunnison County was included in the presidential disaster declaration for the flooding during 1984. Landslides and flooding caused over \$300,000 in damage and roads and bridges were hit especially hard. Flooding on Quartz Creek destroyed electric poles and disrupted service. The communities of Gunnison,

Population (2000 census):	13,956
% Growth from 1990:	35.9%
County Size (square miles):	3,238
County Seat:	Gunnison

Crested Butte, and Pitkin suffered considerable damage.

The following communities participate in the **National Flood Insurance Program**: Gunnison County (unincorporated), and the Towns of Crested Butte, Marble, and Gunnison.

Earthquake-In 2002 Gunnison County had an earthquake that reached 5.1 on the Richter Scale.

There are five Class I and four Class II dams in the County. All Class I dams have emergency preparedness plans in place. According to the October 1, 2003 **Community Rating System List of Eligible Communities**, both Gunnison County and the City of Gunnison have a community rating of nine.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
1995	State	Flooding/Landslide
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

Identify buildings that have the potential for damages due to flooding and mudslides and develop mitigation goals accordingly
Wildfire mapping and mitigation plans and projects

HINSDALE COUNTY

Hinsdale County is located in southwestern Colorado and is approximately 275 miles southwest of Denver. Hinsdale County developed and is included in the **Hinsdale County All Hazard Mitigation Plan**. Through the hazard identification and risk assessment process Hinsdale County identified wildland fire, drought, winter storms and landslides as risks to the community.

Wildland Fire-Wildland and structural fires present hazards to Hinsdale County as 96% of the land in the County is national forest. The recreational uses of these lands have grown increasing the likelihood of a human-caused fire. Colorado State Forest Service figures show in 1999 there were 12 subdivisions in the urban/wildland interface area. In addition, the composition and proximity of buildings in Lake City increases the threat of a fire rapidly spreading throughout the town. The County participates in the **Emergency Fire Fund**.

Drought-Hinsdale County is now going on three years of drought. 2002 was the driest year on record for Hinsdale County and much of the State.

Winterstorm-As with all high mountain areas, winter storms cause problems such as road closures, power outages and avalanche danger in mountainous terrain. It is estimated, that in extreme weather where the temperature of 20 degrees below zero or colder, that power loss of over six hours would result in freezing of water and sewer lines to more than 50% of the population.

Landslide-There are three major areas in Hinsdale County that are considered to be conducive to landslide activity. Those areas are County Road 30, County Road 20 and Highway 149. The potential impact would obviously be on transportation routes.

Additional Information-Hinsdale County has four Class I and three Class II dams. They all have emergency preparedness plans in place.

Lake City has earned a **Storm Ready** designation from the National Weather Service. The following communities participate in the **National Flood Insurance Program**: Hinsdale County (unincorporated areas) and the City of Lake City.

Population (2000 census):	790
% Growth from 1990:	69.2%
County Size (square miles):	1,057
County Seat:	Lake City

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

Continue flooding preparation and awareness education
Update Wildfire Prevention Plan



Hinsdale County

Photos by CDEM

HUERFANO COUNTY

Huerfano County is located in the southeastern region of the State. Huerfano County's main population centers (Walsenburg, La Veta and the Village of Gardner) all lie in floodplains.

Flood-The floodplain of the Cuchara River includes approximately half of the town of Walsenburg. The Cuchara River is at high risk of flooding in Walsenburg, La Veta, and Three Bridges. The following communities participate in the **National Flood Insurance Program**: Huerfano County (unincorporated areas), the Town of La Veta, and the City of Walsenburg.

Winterstorm-The dangers of winter storms have long been recognized by residents and mitigation measures have been put into place. Because of the rural nature of the County, extended power outages present the greatest risk to Huerfano's residents. In addition, travelers on the major highways risk being stranded during severe winter storms.

Wildfire-According to the Colorado State Forest Service, in 1999 there were 34 subdivisions totaling 210,000 acres in the urban/ wildland interface area. The highest fire dangers are in Cuchara Valley. This includes the town of La Veta and Cuchara. An overabundance of ground fuel, drought, and decades of strict fire suppression practices have combined to create a severe fire danger for Huerfano County. The County participates in the **Emergency Fire Fund**.

Hail/Tornado-Thirty-five hail events have been recorded between 1968 and 2003 and six tornados between 1958 and 2003. A 1993 tornado caused over \$100,000 in damages.

Additional Information-Five Class I and three Class II dams are located in Huerfano County. They all have emergencypreparedness plans in place.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

Population (2000 census):	7,862
% Growth from 1990:	30.8%
County Size (square miles):	1,578
County Seat:	Walsenburg



Lathrop State Park
Photo from Colorado State Parks website

JACKSON COUNTY

Population (2000 census):	1,577
Percent Growth from 1990:	-1.7%
County Size (square miles):	1,622
County Seat:	Walden

Jackson County is located in the northcentral region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified exposure to winterstorms and wildland fire, as the County's most probable exposure to hazard.

Wildfire-The threat of wildfire exists throughout most of Jackson County. The areas of Rainbow Lake, Big Creek Lake, and Gould are increasingly vulnerable due to development. Colorado State Forest Service figures show in 1999 there were four subdivisions, totaling 240 acres, in the urban/wildland interface area. The County participates in the **Emergency Fire Fund**.

Winterstorm-Closure of roadways is common during winter storms and residents may become isolated, although most have learned to cope with this occurrence. Utility failures for extended periods of time could create emergency situations.

Additional Information

The Michigan River, which flows through the areas of Gould and Lindland, is a designated high-risk flood area within Jackson County. Due to mountainous terrain, flash flooding could occur on any of the drainage basins in the region.

There are no Class 1 dams in the County, but there are four Class II dams.

The Town of Walden participates in the **National Flood Insurance Program**.

Disaster Declaration History:

- 2002 Presidential Disaster Wildfires
- 2003 Presidential Emergency Snow



Colorado State Forest
Photo from Colorado State Parks website

JEFFERSON COUNTY

Jefferson County is located to the northwest of Denver. The region is split between the foothills in the west and the plains in the east. Jefferson County participated in the development of and is included in the **Denver Regional Council of Governments**

Hazards Mitigation Plan. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the county identified thunderstorms(tornado/hail/lightning), winter storms, landslides, drought, fire and flood as the hazards that pose the greatest possible risk.

Thunderstorm/Winterstorm-Lightning is Colorado's most dangerous weather hazard. Colorado ranks 11th in the U.S. in both injuries and death caused by lightning. Heavy winter storms affecting the metro area occurred in 1913, 1982, 1997 and 2003. Heavy snow storms can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair and removal costs can be significant.

Landslide-The Clear Creek Canyon rockfall hazard area extends along Hwy 6 from the mouth of Clear Creek Canyon near Golden to the Junction with I-70 east of Idaho Springs. It consists of numerous intermittent to nearly continuous rockfall segments along Clear Creek Canyon. The roadway is closely confined by the walls of the narrow canyon and vulnerability of the traveling public is considered a very high hazard. The hazard identification and risk assessment process identified over 400 households and 60 businesses that are exposed to landslide risk in Jefferson County. The county has developed a dipping bedrock overlay zone that is designed to mitigate development in areas that could be damaged by landslides.

Drought-The region has experienced drought for the last 4 years. 2002 was the driest year on record for Denver and much of the State.

Wildfire-The major threat from wildfire is in the forested and wildland areas. In 2000, the Hi Meadow fire resulted in the evacuation of approximately 600 residents from Pine and Buffalo Creek, and nineteen subdivisions., and 10,800 acres were burned. A total of 51 homes, six out buildings and one commercial building were lost to the fire. Also in 2000, the El Dorado fire began approximately seven miles southwest of the City of Boulder. The blaze consumed over a 1,000 acres and forced the evacuation of over 125 homes. No structures were lost in the fire. The county received a Fire Suppression

Population (2000 census):	527,056
Percent Growth from 1990:	20.2%
County Size (square miles):	785
County Seat:	Golden

Assistance Grant as a result. The Colorado State Forest Service reports in 1999 there were 102 subdivisions in the urban/wildland interface. The hazard analysis and risk assessment identified over 37,000 households and 4,000 businesses as having a high risk of fire. Jefferson County has instituted mitigation measures for wildfires. These include promoting the FireWise public information, requiring defensible space and timber fuel reduction, fire resistant building materials and improved access in new and existing residential developments. The county participates in the **Emergency Fire Fund**. Genesee is a recognized **FireWise Community**.

Flood-Seventeen flood events occurred between 1994 and 2003. Flooding is an annual problem along the creeks and drainages of Jefferson County, primarily affecting communities on the eastern edge of the foothills and the western portion of the Front Range. Clear Creek and Bear Creek are both listed as high risk flood areas. Through the hazard identification and risk assessment process 8,400 households and 95 businesses were identified as having a high risk of flooding. The following communities participate in the **National Flood Insurance Program**: Jefferson County (unincorporated), Edgewater, Golden, Lakewood, Westminster, Wheat Ridge, Arvada, and Morrison.

Additional Information-There are 20 Class I dams and 16 Class II dams. All have emergency preparedness plans in place. According to the October 2003 **Community Rating System** List of Eligible Communities, Arvada, Lakewood, Littleton, and Wheat Ridge have a rating of seven, Westminster has eight, Morrison and Golden are nines.

Potential Mitigation Projects:

- Update land development regulations in Englewood
- Revise building codes and floodplain development regulations in Wheatridge
- Continue & upgrade Wildland Fuel Management Program
- Upgrade flood warning systems
- Develop list of at-risk structures in Wheatridge
- Update GIS mapping
- Acquisition and relocation in Lakewood
- Flood proofing/elevation in Lakewood
- Promote insurance and critical facility protection in Lakewood
- Tech hazard assessment

KIOWA COUNTY

Kiowa County is located in the southeastern region of the state.

Population (2000 census): 1,622
Percent Growth from 1990: -3.9%
County Size (square miles): 1,792
County Seat: Eads

Flooding- In 1997 and 1999, Kiowa County experienced heavy rains causing damage to infrastructure. As a result, the county was included in two presidential disasters declarations. The county received Public Assistance funding to repair damaged roads and bridges.

Tornado-Tornados are an annual occurrence in Kiowa County. In 1986, a tornado touched down near Cheyenne Wells and Sheridan Lake. Some utilities and one residence were damaged. In 1989, a tornado touched down east of Eads, killing livestock and destroying utilities. In 1994, a tornado caused heavy damage to a livestock facility and minor damage to several homes. In 2001, damaging winds across southeast Colorado plains caused \$6 million dollars in damage in the region. Forty-two tornados have been recorded from 1958 to 2003, with minimal damage reported due to the open country.

Winterstorm-Winterstorms threaten highway travelers and livestock. Twenty-five heavy snow events between 1993 and 2003 were recorded. Entire communities, as well as individual residences, may become isolated due to road closures and suffer utility outages. Due to severe spring snowstorms in April 2001, Kiowa County was one of 14 counties included in the May 2001 presidential disaster declaration. The plains counties incurred over \$6 million in damages as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

Thunderstorm/Hail-Thunderstorms produced six flash floods between 1994 and 2003. One hundred and thirty five hail events have been recorded between 1960 and 2003.

Additional Information-There are no Class I dams in Kiowa County, but there are two Class II hazard dams.

Disaster Declaration History:

1995	State	Flooding
1997	State	Blizzard
1997	Presidential Disaster	Flooding
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

KIT CARSON COUNTY

Kit Carson County is located in the northeastern region of Colorado. Kit Carson County participated in the development of and is included in the **North-eastern Colorado Hazard Mitigation Plan**.

Through the hazard identification and risk assessment process the county identified flooding, winter storms, drought, tornados and thunderstorms as the highest hazard risks to the county.

Flooding-Eleven flood events between 1993 and 2003 occurred, with six of them occurring in the City of Burlington. In 2003, a thunderstorm triggered flash flooding in the City of Burlington. Law enforcement reported one to two feet of water across some city streets.

Winterstorms-Kit Carson County is threatened annually by severe winterstorms. Between 1993 and 2003, 21 heavy snow events were recorded. Winterstorms isolate residents and communities due to road closures and utility outages. Interstate 70 passes through Kit Carson County. The Interstate is subject to closure during severe winter storm conditions. Motorists may become stranded in remote areas.

Drought-Drought could affect the entire County due to the agricultural base of the region. A precipitation shortage could affect dry land farming, irrigation, and community water systems. Fire fighting is also hampered by drought conditions.

Thunderstorms/Tornado-Severe thunderstorms and tornados are common in Kit Carson County. The higher population areas of Burlington, Flagler, Seibert, Bethune, and Vona are vulnerable to tornado activity. Eighty-four tornados were recorded between 1971 and 2003. Three of those tornados occurred in 1998 and two of them in 1999. Two hundred and forty eight hail events have been recorded between 1958 and 2003.

Additional Information

Grass fires are common along the railroad tracks, wheat fields, and in the prairies. According to the Colorado State Forest Service, in 1990 there was 1 subdivision, totaling 30 acres, in the urban/wildland interface area. In 2002, Kit Carson County lost approximately 6,000 acres to wildfires. There is one Class II dam in the county.

Population (2000 census):	8,011
Percent Growth from 1990:	12.2%
County Size (square miles):	2,171
County Seat:	Burlington

Disaster Declaration History:

1990	USDA Disaster	Drought
1997	State	Blizzard
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

- Obtain Storm Ready certification
- Continue and expand crop insurance public education
- Provide reverse 9-1-1 public education
- Provide a back-up sewage pump to avoid back ups during power loses
- Construct a community tornado shelter in Burlington



Kit Carson County fair carousel. Photo by CDEM

LAKE COUNTY

Lake County is located in the central area of the State in the Upper Arkansas Area (UAA) region. Lake County is the northern most county in the UAA. Lake County participated in the development of and is included in the **Upper Arkansas Area Council of Governments Hazard Mitigation Plan**. Through the hazard identification and risk assessment process Lake County identified wildland fire, flood, drought and winter storms as the highest risks.

Wildfire-The threat of wildfire increases in dry years as does the risk to life and property due to an increase in the number of people building in the urban/wildland interface. Colorado State Forest Service figures show in 1999 there were 34 subdivisions, totaling 6,159 acres, in the urban/wildland interface area. The County participates in the **Emergency Fire Fund**.

Flood-The extreme geography in the UAA has the potential for severe flash flooding. There are many campgrounds along the Arkansas River; flash flooding threaten the structures and people located in the area. Lake County participates in the **National Flood Insurance Program**.

Drought-The 2002 drought had a severe economic impact in the Upper Arkansas area. By the time summer arrived, the Upper Arkansas River was running well below normal flow levels. The low water, in addition to the nationally publicized drought, caused many people to cancel pre-planned river trips and tourism to the region. Many families rely on ground wells for water supply while ponds and ditches are relied upon by local ranchers for their livestock and crops. The drought caused a number of wells to dry up, forcing many residents to have water "hailed in".

Winterstorm-The Upper Arkansas area weather is typical of Colorado where sunshine and blue skies change quickly to plunging temperatures and significant snow fall. There are a large number of people who visit the UAA for wintertime recreation. Although most residents of the County have developed a high level of self-sufficiency, there is great concern for the safety of visitors. Quickly changing weather can trap recreationists out in the elements without the necessary equipment and supplies. Unlike commuters who are trapped on or near a road, many of these winter activities draw people deep into the wilderness where they can be difficult to locate and rescue.

Population (2000 census):	7,812
Percent Growth from 1990:	30.0
County Size (square miles):	380
County Seat:	Leadville

Additional Information-The County has three Class I dams and two Class II dams. All have emergency preparedness plans in place.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2003	Presidential Disaster	Wildfires

Potential Mitigation Projects:

- Improve the defensibility of residential and commercial properties against wildfire
- Reduce the fuel load at strategic locations in WUI
- Reduce the vulnerability of municipal water supplies through public education
- Establish a stormwater management plan
- Improve early notification capabilities for winter storm events
- Reduce the vulnerability of community assets to flash floods by improving the administration of FEMA flood-hazard areas

LA PLATA COUNTY

La Plata County is situated in the southwest corner of the State with a topographic layout ranging from high desert in the southern half of the County to high mountain wilderness in the northern half. La Plata County continues to be the largest producer of natural gas in the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified exposure to winterstorms, as the County's most probable exposure to hazard.

Winterstorm-The northern half of the County is subject to severe winter storms due to the high mountainous terrain. Heavy snow, ice, severe winter storms and blizzards are common to La Plata County. Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair and snow removal costs can be significant

Flooding-Thirty-eight flash flood events between 1996 and 2003, thirty of them in Durango. As recently as 2002, flash flooding along the east side of the Animas Valley caused over \$1.5 million in property damage. Four rivers flow south from the high mountains in the northern half of the County through mountain valleys into New Mexico. Development along these rivers and tributaries are at risk during large flooding events. Vallecito Creek and the Animas River system pose the greatest threats to hundreds of homes.

La Plata County (unincorporated areas), the City of Durango, and the Towns of Bayfield and Ignacio participate in the **National Flood Insurance Program** and enforce floodplain management regulations

Wildfire-Ten wildland fires occurred between 2002 and 2003. Suppression costs for the 2002 fires were over \$10 million dollars. The Valley fire was ignited by lightning and destroyed 22 homes and consumed 400 acres. The Missionary Ridge fire destroyed 50 homes, 22 structures and consumed 70,000 acres. La Plata County continues to catch the eye of the nation and has been featured in several popular travel, recreational, and domestic publications. The interest in buying land and building has increased in recent years. Building records show that 11,800 homes have been built in the unincorporated area of La Plata County since 1976. 5,775 of those homes were constructed since 1992 producing an average of 641 residential permits each of the eight-year period. Many of these homes have been constructed

Population (2000 census):	43,941
Percent Growth from 1990:	36.1%
County Size (square miles):	1,685
County Seat:	Durango

in heavily forested wildland/urban interface settings. Dry conditions in the southwest have caused several large wildland fires in recent years. The 2002 wildfire season consumed over 70,000 acres, approximately 50 homes and exceeded \$40 million dollars in suppression costs.

Tornado-Four tornados occurred between 1992 and 2002.

Additional Information-Seven Class I dams and four Class II dams are situated on the river systems. All have emergency preparedness plans in place.

According to the October 1, 2003 **Community Rating System Eligible Communities List**, the City of Durango is rated nine.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought



Animas River Gorge
Photo from Colorado State Parks website

LARIMER COUNTY

Larimer County is located in the extreme northcentral region of Colorado. The County extends to the Continental Divide and includes several mountain communities. Agricultural focus in Larimer County is on livestock versus crops. Larimer County participated in the development of and is included in the **Northern Colorado Regional Hazards Mitigation Plan**. Through the hazard identification and risk assessment process, using probability and potential impacts for hazards posing the greatest possible risk, the County identified wildland fires, flooding, windstorms and winterstorms as the hazards that pose the greatest possible risk.

Wildland Fire-In 2000, the Bobcat Gulch fire, caused by human error, resulted in the evacuation of 60 households and consumed 10,599 acres of grass, brush and timber and destroyed a number of homes. An estimated 1500 to 2000 households were within easy reach of the fire. The County received a Fire Suppression Assistance Grant. In 2001, the Armageddon fire consumed over 1,000 acres. The fire threatened approximately 100 homes in the Carter Lake area. A Fire Management Assistance Grant was awarded to support fire fighting activities. Colorado State University also suffered extensive damage. Total damage estimates throughout the Fort Collins area were approximately \$190 million, \$135 million of that to the CSU campus. Colorado State Forest Service figures show in 1999 there were 200 subdivisions, totaling 148,000 acres, in the urban/wildland interface area. A growing number of homes in the interface are increasing the potential for wildfire to take lives and cause property damage. Currently, wildland fire could have an impact on one school, several fire stations, watershed areas and water supply areas within Larimer County. The County participates in the **Emergency Fire Fund**.

Flood- Flash flood hazard is considered the greatest risk in the area of natural disasters to Larimer County. Numerous floods in the history of this region have resulted in loss of life and a substantial dollar loss to property. Twelve flash flood events occurred between 1994 and 2003. In 1997 a flash flood killed 5 people and injured 40 others when 10-15 foot wall of water surged through two mobile home parks in Fort Collins. The flooding destroyed 108 homes and damaged 481 others, 86 significantly. The following communities participate in the **National Flood Insurance Program**: Larimer County (unincorporated), Estes Park, Berthoud, Wellington, Fort Collins, and Loveland.

Population (2000 census):	251,494
Percent Growth from 1990:	35.1%
County Size (square miles):	2,614
County Seat:	Fort Collins

Windstorms Windstorms are common and impact Larimer County annually. Between 1960 and 2003, 105 high wind events have been recorded.

Winterstorm-Winterstorms in northern Colorado can severely impact the region in a short period of time. Disruption of transportation systems, utility outages, school cancellations and delayed emergency response are all potential results of a winter storm.

Additional Information-There are 49 Class I and 38 Class II dams. All have emergency preparedness plans in place. According to the October 1, 2003 **Community Rating System Eligible Communities List**, the City of Fort Collins is rated four.

Disaster Declaration History:

1999	Presidential Disaster	Flooding, Mudslides, Landslides
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow



Lory State Park From Colorado State Parks website

Potential Mitigation Projects:

- Through the code process insure that all utilities in newly developed areas are underground
- Update storm water system
- Improve emergency warning systems
- Limit new development in flood plain areas
- Evaluate critical facilities located in flash flood areas and plan accordingly
- Install emergency generators in critical facilities
- Encourage construction safe rooms in new construction where possible
- Increase water storage capabilities
- Require water saving plumbing in new construction

LAS ANIMAS COUNTY

Las Animas County is located in the extreme southern region of the State.

Flooding-Four flood events between 1994 and 2002 were recorded. A flash flood in 1999 was the most significant river flooding along the Arkansas River since at least 1965. The flood which was induced by persistent rainfall caused over \$7 million in property and crop damage. In Las Animas County, the Purgatoire River flows through several towns including Trinidad. In 1955, the Purgatoire flooded, killing two people and causing \$4,000,000 in damage. The Apishapa River is also listed as a high-risk flood area. Flooding along this river could cause damage in the towns of Aguilar and Gulnare. In 1999, Las Animas experienced heavy rains that caused damage to infrastructure. As a result, the county was included in a presidential disaster declaration. The following communities participate in the **National Flood Insurance Program**: Las Animas County (unincorporated areas) and Trinidad.

Mine Subsidence-Mine subsidence is another potential hazard. There is high risk for mine subsidence in the western portions of the County due to extensive underground coal mining that has occurred. Geologic hazards in Las Animas County include avalanches. These areas are located in the western edge of Las Animas County in the Sangre de Cristo Range.

Tornado-Twenty-two tornados have been recorded between 1954 and 2003. Fourteen of them in or near Las Animas.

Thunderstorm-Thirty-seven thunderstorms and high wind events have been recorded between 1956 and 2003. Thunderstorms cause flash floods, hailstorms, and can spawn tornados. From 1950 to 1998, 16 tornados have been reported in the county. One hundred and thirteen hail events were recorded between 1958 and 2003.

Winterstorm-Thirty-four heavy snow events between 1993 and 2003 were recorded.

Wildfire-Wildfires are an annual occurrence in Las Animas County. In 2002 alone, Las Animas County lost approximately 30,000 acres to wildfire and incurred more than \$3 million dollars in suppression costs. The potential for larger fires exists and as more people move into the urban/wildland interface the risk increases. Colorado State Forest Service figures show in 1999 there were 78 subdivisions,

Population (2000 census):	15,207
Percent Growth from 1990:	10.5%
County Size (square miles):	4,794
County Seat:	Trinidad

totaling 431,000 acres, in the urban/wildland interface.

Drought-Drought could affect the entire county due to Las Animas' agricultural base. Water shortages can affect dry land farming, irrigation, and community water systems. Fire fighting and prevention is also hampered by drought conditions.

Six Class I dams and one Class II dam are located in Las Animas County. All Class I dams have emergency preparedness plans in place.

Additional Information-Six Class I dams and one Class II dam are located in Las Animas County.

Disaster Declaration History:

1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	State	Blizzard
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

LINCOLN COUNTY

Lincoln County lies in the plains of eastern Colorado in an area known as the Arkansas Divide. Lincoln County participated in the development of and is included in the **Northeastern Colorado Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process flooding, winter storms and drought were identified as the County's most frequent hazards.

Flooding-From 1998 to 2003, 4 flood events were reported. In 1998 torrential rain, along with hail caused flooding and flash flooding across southern Lincoln County. Hail up to 8 inches deep covered the roadway just east of Karval. In 2002 very heavy rainfall caused flash flooding across north-central Lincoln County washing out Highway 71. The Town of Limon participates in the **National Flood Insurance Program**.

Winterstorm-Nine heavy snow events have been recorded between 1993 and 2004. Heavy snow, ice, severe winter storms, and blizzards are common to northeastern Colorado. With the exception of flooding, these hazards have caused more State and Federal disaster declarations, than any other hazard.

Drought-Lincoln County has experienced 6 multi-year droughts since 1893. Since 1999, Colorado has entered another period of significant drought. As of June 2004, Colorado is still being impacted by the drought.

Additional Information- There is one Class I dam located in the County and two Class II dams. The Class I dam has an emergency preparedness plan.

The County is subject to significant, non-tornadic winds with alarming frequency. However, tornados can and have occurred in Lincoln County, but due to its rural nature, large-scale destruction is not usually common. From 1951 to 2003, 72 tornados have been recorded. In 1990, a tornado ripped through the town of Limon causing \$25 million in damages. Many residences, public utilities, and businesses suffered extensive damage. In 1999, two tornados touched down causing extensive damage north of Genoa. Damage estimates were over \$3 million.

Population (2000 census):	6,087
Percent Growth from 1990:	34.4%
County Size (square miles):	2,586
County Seat:	Hugo

Disaster Declaration History:

1990	State	Tornado
1997	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storm
2002	USDA Disaster	Drought

Potential Mitigation Projects:

- Obtain Storm Ready certification
- Promote targeted flood insurance education to the 58 uninsured buildings located in a floodplain in Limon
- Research the development of erosion/sediment control regulations



Lincoln County

Photo by CDEM

LOGAN COUNTY

Logan County is located in the northern region of the State in the great plains. Logan County participated in the development of and is included in the **Northeastern Emergency Management Association Hazard Mitigation Plan**. Flooding, winter storms and drought are the most frequent hazards experienced by the county.

Flooding-From 1995 to 2003, nine flood events were reported. In July 1997, 14 inches of rain fell in nine hours in the Pawnee Creek area causing flooding in the Towns of Atwood and Sterling resulting in a presidential disaster declaration. Flood damages amounted to \$20 million countywide. The City of Sterling and Logan County successfully competed for hazard mitigation funds to improve drainage.

Winterstorm-Due to severe spring snowstorms in April 2001, the county was one of 14 included in the May 2001 presidential disaster declaration. The plains counties incurred over \$6 million in damages as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

Drought-Beyond the obvious impacts of crop loss and residential water-use restrictions the drought has impacted the cattle industry by forcing ranchers to sell their livestock.

Additional Information-Forty-nine tornadoes were reported between 1950 and 2003, and as recently as June 2004, a tornado touched down in the Sterling community. Preliminary damage assessment estimates are over \$1 million dollars.

According to the Colorado State Forest Service, in 1990 there were six subdivisions totaling 240 acres in the urban/wildland interface. In 2002, scattered high based thunderstorms, producing frequent lightning but very little rain ignited dozens of grass fires across eastern Weld, Logan, Morgan and Washington Counties. Outflow winds coupled with an already strong surface pressure gradients and extreme drought conditions, allowed the fires to quickly scorch over 12,000 acres of farmland. There is one Class I dam in Logan County.

The following communities participate in the **National Flood Insurance Program**: Logan County (unincorporated areas), the Cities of Crook and Sterling, and the Town of Fleming.

Population (2000 census): 20,504
Percent Growth from 1990: 16.7%
County Size (square miles): 1,827
County Seat: Sterling

Disaster Declaration History:

1969	Presidential Disaster	Flooding
1980	State	Flooding
1980	State	Grasshoppers
1997	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storm
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

Potential Mitigation Projects:

Promote targeted flood insurance campaigns to uninsured buildings in Sterling and Crook
Obtain Storm Ready certification
Implement emergency warning system in Merino
Determine estimate for replacement cost of critical facilities in the floodplain
Floodproofing in Merino
Drainage improvements in the City of Sterling



North Sterling State Park
Photo from Colorado State Parks website

MESA COUNTY

Mesa County is located in the western region of the State and borders Utah. Mesa County, which is frequently referred to as the Grand Valley, is noted for its wide variety of agricultural produce making them particularly susceptible to drought. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, emergency management personnel identified flooding, drought, wildland fire and extreme heat as hazards threatening the Mesa County area.

Flooding-Floods have occurred frequently throughout Mesa County. Nineteen flood events were recorded between 1994 and 2003. They have caused enormous damage. Flooding in the county is mostly caused by snowmelt in the larger drainage basins and by cloudbursts over the smaller drainage basins. Seven major flood events have occurred on the Colorado River, four on the Gunnison River, and four on the Dolores River. Floods occurred in 1884, 1917, 1920, 1921, 1935, 1952, 1957, 1983 and 1984 on the Colorado River; in 1884, 1920, 1921 and 1957 on the Gunnison River, and in 1884, 1909, 1911, and 1958 on the Dolores River. Mesa County (unincorporated areas), Collbran, Fruita, DeBeque, Grand Junction, and Palisade participate in the **National Flood Insurance Program**.

Drought-Mesa County is agricultural in nature and has a large number of orchards and vineyards. A potential economic loss for the county, as it enters its fourth year of drought.

Wildland Fire-Between 1999 and 2003, 10 wildland fires have been recorded in the county. Historically, wildfires have occurred each spring and summer during lightning season, spring burning or irrigation ditches and in the fall when crop residue is burnt. Based on the development taking place in the county, areas that are at highest risk include the Plateau Valley area, Gateway and Glade Park. According to the Colorado State Forest Service, in 1999 there was one subdivision, totaling 30 acres, in the urban/wildland interface area. Much of Mesa County's public land is used for recreation increasing the risk of human-caused fires. Drought also increases the risk of wildfire as it did in the summer of 1994 when there were several fires in Mesa County. The County participates in the **Emergency Fire Fund**.

Extreme Heat-Mesa County is subject to extreme heat. This combined with the current drought makes the county vulnerable to wildland fire and economic loss due to the agricultural nature of the area.

Population (2000 census):	116,255
Percent Growth from 1990:	24.8%
County Size (square miles):	3,312
County Seat:	Grand Junction

Additional Information

Landslide-The Lamplite Park landslide is a small landslide area, but it has been responsible for the destruction of ten homes that were placed on the backfill leadscarp area of an active landslide in the early 1980's. It is a classic case of ill advised land-use in a recognized active landslide area. The danger that existed to residents of the most seriously affected homes, from possible structural collapse or fire and explosion from ruptured gas lines, was mitigated by the removal of those homes by the City of Grand Junction. Another critical landslide area is the De Beque Canyon landslide area, which has potentially very severe public safety, transportation, and economic consequences. There are nine Class I and 35 Class II dams.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
1995	State	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

Drainage improvements in Grand Junction
Construction of detention/retention ponds
Update Flood Insurance Rate Maps
Flood insurance education

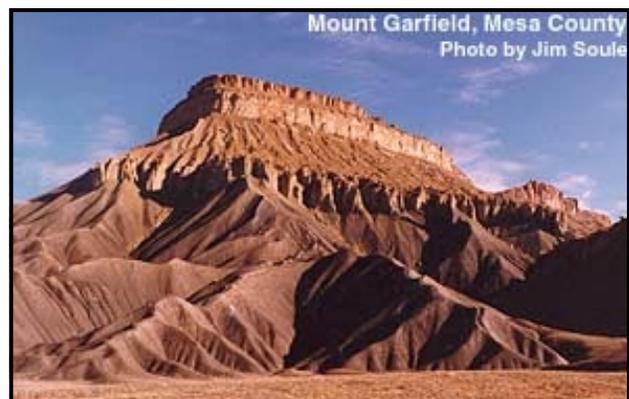


Photo by Jim Soule, Colorado Geological Survey

MINERAL COUNTY

Mineral County is located in the northwest corner of the San Luis Valley and is primarily in the mountains. The principle population center in the County is the Town of Creede.

Flooding-In the Creede area, the Rio Grande River is at high risk of flooding. This river flows into the County from the northwest, downstream from the Rio Grande Reservoir in Hinsdale County. If this dam were to break, Highway 149 and a number of residences would be threatened. To help offset this hazard, Rio Grande Reservoir has an emergency preparedness plan in place.

Earthquake-At least three earthquakes have been recorded near Creede. Earthquakes of damaging intensity could occur in this area. The possibility of damaging earthquakes calls into question the safety of dams in the area.

Landslide-The Wolf Creek Pass area along US Hwy 160 has a high potential for landslides and rockfalls. It has a long history of high maintenance and road closures from landslides, debris flows, rockfall and snow avalanches. Many cut-slope and road-fill failures have been due to unstable clay-rich volcanic rocks and glacial debris that failed during heavy snowmelt runoff. The Colorado Department of Transportation has been very active in this serious hazard area and, in the past 15 years, has mitigated many of the most serious hazards.

Winterstorm-The major risk from winter storms is to travelers or recreational visitors. Roadways often become impassable requiring rescue activities. Residents are use to the severe winters and are, for the most part, prepared. Power outages could create or complicate emergency situations. Avalanches are common on steep slopes located throughout the County. In these same areas, mudslides are a problem during wet seasons.

Wildland Fire-Mineral County is mainly National Forest and Federal Wilderness Lands (90%). Colorado State Forest Service figures show in 1990 there were seven subdivisions, totaling 1,540 acres, in the urban/wildland interface area. The threat of wildfire is high, particularly in years of limited snowpack and drought. The County participates in the **Emergency Fire Fund**.

Additional Information-The following communities participate in the **National Flood Insurance**

Population (2000 census):	831
Percent Growth from 1990:	48.9%
County Size (square miles):	921
County Seat:	Creede

Program: Mineral County (unincorporated areas) and the City of Creede.

There are three Class I and seven Class II dams in the County. The Class I dams all have emergency preparedness plans in place.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

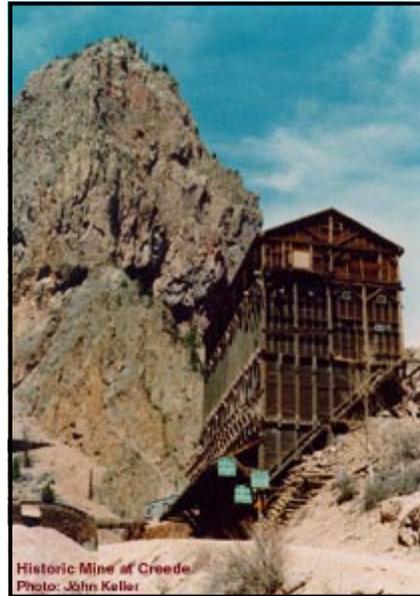


Photo by John Keller
From Department of Natural Resources website

MOFFAT COUNTY

Moffat County is located in the extreme northwest region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified winterstorms as the hazard threatening the Moffat County area.

Winterstorm-Heavy snow, ice, severe winter storms and blizzards are common to the northwestern region of the State. Winter storms in northwestern Colorado can severely impact the region in a short period of time. Disruption of transportation systems, utility outages, school cancellations and delayed emergency response are all potential results of a winter storm.

Additional Information-The Yampa River and Fortification Creek in the Craig area are listed as high risks for flooding. Dinosaur National Monument has several campgrounds near the banks of the Yampa River. In 1984, damage occurred to roads, bridges and other facilities. In addition to flood damage, mudslides caused extensive damage, including over \$0.5 million in damage to County Road 51.

Wildfire-Wildfire is a problem in many areas of the county. A large number of oil/gas wells in the area increase the wildfire hazard as well as the possibility for a hazardous materials incident. In 2000, wildfire consumed over 11,000 acres in extreme northwest Colorado and again in 2001 wildfire consumed 3,243 acres of rangeland and forest. In 2002, wildfire consumed over 3, 000 acres and cost approximately \$2 million dollars to fight. The county participates in the **Emergency Fire Fund**.

Earthquake-At least six earthquakes have been recorded in the county. There is a possibility of an earthquake of damaging intensity occurring.

Moffat County has one Class I and three Class II dams located within the county. The Class I dam is Elkhead Creek and it does have an emergency action plan in place.

Flood-Four flood events have occurred between 1995 and 2003. The following communities participate in the **National Flood Insurance Program**: Moffat County (unincorporated areas) and Craig.

Population (2000 census):	13,184
Percent Growth from 1990:	16.1%
County Size (square miles):	4,754
County Seat:	Craig

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought



Green River bend around Steamboat Rock
Dinosaur NM, Colorado
Photo by Chris Carroll

Photo by Chris Carroll

Photo from Department of Natural Resources website

MONTEZUMA COUNTY

Montezuma County is located in the extreme southwestern region of the State.

Flood-Four flash flood events have been recorded between 2002 and 2003 primarily in the Cortez area causing approximately \$20,000 in damages. The Mancos River and McElmo Creek present the most significant flood hazards to the residents of Montezuma County. Both are listed as high risk flood areas and threaten portions of Cortez and Mancos. Property in Mancos has sustained flood damage several times since 1970.

The following communities participate in the **National Flood Insurance Program**: Mancos, Montezuma County (unincorporated areas), Cortez, and Dolores.

The following communities participate in the **National Flood Insurance Program**: Mancos, Montezuma County (unincorporated areas), Cortez, and Dolores.

Winter Storm-Severe winter storms often cause emergency situations. Snow depths can exceed 52 inches and can be accompanied by extremely low temperatures and high winds. This can cause road closures, power loss, and livestock loss. Avalanches occur on a yearly basis, most in back country areas, which presents a hazard to skiers and winter recreationists.

Mudslide-Mudslides are common on the steeper slopes in the county and may cause temporary road closures. The entrance to Mesa Verde National Park has several large active landslide areas that continues to be a very high-priority landslide area for Montezuma County and has been under heavy maintenance and reconstruction on an annual basis. Closures and detours are a serious and frequent detriment to the National Park.

Drought-Drought is of particular concern to Montezuma County. During dry years water rationing is common. Drought has not caused a loss of human life, but has caused agricultural and livestock losses. Wildfire risk is increased during drought periods.

Hail-Fourteen hail storms have been recorded between 1992 and 2003. A 2003 hailstorm did extensive damage to residential and commercial buildings. Estimates of property and crop damage are over \$1 million dollars.

Population (2000 census):	23,830
Percent Growth from 1990:	27.6%
County Size (square miles):	2,094
County Seat:	Cortez

Additional Information-The Colorado State Forest Service, in 1990 reported there were 90 subdivisions totaling 9,500 acres in the urban/wildland interface. In 2002 lightning caused a fire in Mesa Verde National Park that caused evacuation and closure of the Park. The fire consumed over 2,600 acres, a total of seven structures were destroyed including two houses, a water tank, and a sewage treatment plant. The County participates in the **Emergency Fire Fund**.

The following communities participate in the **National Flood Insurance Program**: Mancos, Montezuma County (unincorporated areas), Cortez, and Dolores.

Disaster Declaration History:

1996	Local	Wildfires
2000	Local	Wildfires
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought



Mancos State Park
Photo from Colorado State Parks website

MONTROSE COUNTY

Montrose County is located in the southwest region of the State on the western slope of the Rocky Mountains.

Flood-The Cimarron River is a high-risk drainage threatening the Town of Cimarron and several subdivisions. Floods on the Uncompahgre River have disrupted highway, road and rail traffic, inundated structures, damaged power, water, and sewer systems, and caused agricultural damage. Floods in 1983 and 1984 caused \$300,000 in damages to public property. Floods in 1984 occurred in Montrose, Naturita, Olathe, and several unincorporated areas of the County. Montrose County was included in the 1984 presidential disaster declaration for flooding. A flood in 1996, caused \$200,000 in property damage in and around Naturita. The following communities participate in the **National Flood Insurance Program**: Montrose County (unincorporated areas), the City of Montrose, and the Towns of Naturita and Olathe.

Drought-Montrose is an agricultural county dependent upon water for survival. The Project 7 Water Authority provides water through the historic Gunnison Tunnel. A season of drought or the collapse of the tunnel would cripple the agricultural community.

Wildfire-Wildfire occurs almost yearly in Montrose County and drought increases this risk. Historically, wildfires have only destroyed forest, but with people moving into the urban/wildland interface areas, increasing numbers of structures and people are at risk. In 2002 lightning strikes ignited several fires in the Bucktail Creek area on the Uncompahgre Plateau and consumed 3,633 acres of forest. Colorado State Forest Service figures show in 1990 there were 92 subdivisions, totaling 10,580 acres, in the urban/wildland interface. The County participates in the **Emergency Fire Fund**.

Landslide- The Black Mesa landslide, earthflow and rockfall corridor is an active landslide area.

Additional Information-There are six Class I dams and one Class II dam located in the County.

Population (2000 census):	33,432
Percent Growth from 1990:	36.9%
County Size (square miles):	3,007
County Seat:	Montrose

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

MORGAN COUNTY

Morgan County is located in the northeastern region of the State in the plains and is primarily agricultural. Morgan County participated in the development of and is included in the **Northeast Emergency Management Association Hazard Mitigation Plan**. Through the hazard analysis and risk assessment process, winter storms, windstorms, drought, flood, hail and tornado are identified as the hazards most frequently occurring in the county.

Winterstorm-Fourteen heavy snow events recorded between 1993 and 2003. Heavy snow, ice, severe winter storms and blizzards are common to northeastern Colorado causing road closures, school cancellations and power outages.

Windstorm/Hail/Tornado-frequently high winds, tornadoes and hail are associated with severe summer storms, which occur almost daily throughout the spring, summer and fall in northeastern Colorado. Hail is a major cause of agricultural losses in Morgan County. Morgan County has experienced 17 hail events, between 1950 and 2003, with hail exceeding 2 inches in diameter. Between 1955 and 2003, 60 tornados were reported in the county. Tornados have been documented in or near Wiggins, Ft. Morgan, Brush, and Goodrich.

Drought-Because Morgan County is primarily agricultural, the obvious impact of drought is crop loss. Morgan County is in their 4th year of drought. 2002 was the driest year on record.

Flood-Eleven flood events have been recorded between 1950 and 2003. In July 1997, 10 inches of rain fell in 15 hours near Schaefer Draw. The town of Weldona flooded and homes and businesses sustained damage. Flooding affected 15,000 acres, 36 homes and 6 businesses costing over \$1 million dollars in damages. In addition to the 1997 floods, significant flood events have occurred in Morgan County in 1905, 1935, 1938, 1965 and 1995. Significant flood events in Brush occurred in the years of 1921, 1930, 1935, 1939, 1940, 1955 and 1965. Flooding along the South Platte River could affect low-lying areas in Orchard, Goodrich, Weldona, Log Lane Village, Fort Morgan, and Snyder. Flash flooding is possible along many creeks, including Kiowa and Beaver Creeks, and occurs frequently during severe thunderstorms. The following communities participate in the **National Flood Insurance Program**: Morgan County (unincorporated areas) and the Cities of Brush, Fort Morgan, and Wiggins.

Population (2000 census):	27,171
Percent Growth from 1990:	23.8%
County Size (square miles):	1,282
County Seat:	Fort Morgan

Additional Information-According to the October 1, 2003 **Community Rating System Eligible Communities List**, the City of Brush is rated a nine. There is one Class I and three Class II dams in the county. The Class I dam has an emergency preparedness plan in place.

The Colorado State Forest Service in 1990 reported there were seven subdivisions, totaling 280 acres, in the urban/wildland interface area. The County received a **Storm Ready** designation from the National Weather Service in 2001 and Morgan County was in the **Project Impact Program** as a 1999 community.

Disaster Declaration History:

1996	Local	Tornado
1997	Presidential Disaster	Flood
1998	Local	Hail
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

- Siren upgrades for Towns of Hillrose, Snyder and Weldona
- Determine best mitigation options for the 9 critical facilities located in a floodplain in Brush
- Conduct targeted flood insurance campaign
- Feasibility study for structural solutions to the flood threat in Brush



Jackson Lake State Park
Photo from Colorado State Parks website

OTERO COUNTY

Otero County is located in the southeastern region of Colorado. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, county emergency management personnel identified, using probability and potential impacts for hazards posing the greatest possible risk, winterstorms, wind storms, fire, hail storms and extreme heat as the hazards that pose the greatest possible risk.

Winterstorm- Winter storms bring about road closures and isolation of residents and communities. On October 24, 1997 a blizzard hit the county that killed cattle causing approximately \$4 million in damages.

Windstorm- Sixty-six thunderstorms and high wind events were recorded between 1957 and 2003.

Flood- In 1999, heavy flooding occurred between Rocky Ford and La Junta along the Arkansas River. Portions of northern La Junta were under five to six feet of water, which damaged or destroyed over 250 homes and businesses. Many areas of Otero County are susceptible to flash flooding induced by heavy rains. Areas of high risk include the King and Anderson Arroyos. The Arkansas River could produce flooding which would inundate large portions of La Junta. The County successfully competed for funding from various hazard mitigation sources and has acquired and demolished 58 homes that were substantially damaged. The Colorado Department of Transportation and the County also secured funding for a project to improve drainage in the Rocky Ford area. The following communities participate in the **National Flood Insurance Program**: Otero County (unincorporated areas), the Cities of La Junta and Rocky Ford, and the Town of Manzanola.

Thunderstorm/Tornado- Spring and summer are accompanied by the threat of severe thunderstorms, flash floods, and tornados. Twenty-two tornados have been reported in this county from 1953 to 2003 and 95 hail events between 1957 and 2003.

Drought- This heavily agricultural area can suffer extensive economic damage in times of drought and makes the area vulnerable to hail and high winds. These conditions also increase the risk of wildfire.

Additional Information- Although no high hazard dams are located in the county, residents along the Arkansas River are at risk if the dam upstream were to fail. There are seven Class II dams.

Population (2000 census):	20,311
Percent Growth from 1990:	0.6%
County Size (square miles):	1,267
County Seat:	La Junta

Disaster Declaration History:

1997	State	Blizzard
1997	Presidential Disaster	Flooding
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	State	Blizzard
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

Acquisition, elevation, or relocation of floodprone properties in North La Junta

OURAY COUNTY

Ouray County is located in the southwestern region of Colorado. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, county emergency management personnel identified winterstorms and fire as hazards threatening the County.

Winterstorms-Winter storms and avalanches are an annual problem in this high mountain county. Tourists are at greatest risk; local residents have adapted to and are prepared for these conditions. Fifteen major avalanche chutes are located in Ouray County, as well as numerous minor chutes.

Wildland Fire-Colorado State Forest Service figures show in 1999 there were 68 subdivisions, totaling 2500 acres, in the urban/wildland interface. The county participates in the **Emergency Fire Fund**.

Additional Information-

Flood-Nine flood events have been documented between 1909 and 2003. Historical floods have occurred in 1909, 1927, 1929, 1951, 1965, 1971, 1973, 1983, and 1984. In anticipation of flooding, in 1984 several levees were constructed and other mitigation efforts undertaken. This preparation cost over \$35,000 but prevented thousands of dollars in damage to public and private property. A flash flood in 1999 caused over \$1.3 million dollars in property damage. The flood damaged or destroyed several county bridges, damaged about two miles of County Road 24, damaged several out buildings and carried away several vehicles. Flooding in this area is usually the result of cloudbursts in the steep mountains and rocky tributaries within confined basins. Six drainage basins discharge in the immediate vicinity of Ouray. The Uncompahgre River is listed as a high flood risk through much of the County including the Town of Ouray. Many tourist facilities are located along this river and could be at risk during a flood event. These cause damaging mud and debris flows. The following communities participate in the **National Flood Insurance Program**: Ouray County (unincorporated areas), the City of Ouray, and the Town of Ridgway.

The only dam located in Ouray County is rated Class I. The dam has an emergency preparedness plan.

Population (2000 census):	3,742
Percent Growth from 1990:	63.1%
County Size (square miles):	540
County Seat:	Ouray

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

PARK COUNTY

Park County is located in the center of the state. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, county emergency management personnel identified winterstorms, drought, windstorms and lightning as the hazards that pose the most risk to the county.

Winterstorms-Severe winters storms are common in Park County, but residents are generally self-sufficient. Problems encountered range from closure of roadways and loss of power to possible building collapse. The rescue and sheltering of stranded travelers is a major concern during these storms.

Wildland Fire-In 2002 the Hayman Fire burned in four counties including Park. The fire consumed 137,600 total acres and resulted in, 16 injuries, five deaths and 600 structures lost including 133 homes. Suppression costs were in excess of \$36 million.

In June 2000, the Hi Meadows Fire burned 11,000 acres and destroyed 58 structures. Property losses were estimated to be \$5 to \$10 million. Most of Park County is rangeland and the rest is mountainous, which makes it susceptible to both forest fire and range fires. An increase of new residents in the urban/ wildland interface area has increased the danger from wildfire. According to the Colorado State Forest Service, in 2000 there were 20 subdivisions, totaling 400 acres, in the urban/wildland interface area. The County participates in the **Emergency Fire Fund**.

Windstorms-The risk of straight-line winds is a common occurrence throughout the year. The impacts of strong, straight-line winds include soil erosion, blowing dust, windblown weeds, crop damage and structure damage.

Lightning-History show that most of the wildland fires in Colorado are caused by lightning strikes. Colorado ranks 11th in the U.S. in both injuries and deaths caused by lightning. Six lightning events have been recorded between 1994 and 2003, resulting in one death and one injury.

Drought-Park County has entered its fourth year of drought. 2002 was the driest year on record.

Additional Information-There are at least five faults running through Park County. Records show at least one earthquake has occurred in the County during this century. The South Platte River, which

Population (2000 census):	14,523
Percent Growth from 1990:	102.4%
County Size (square miles):	2,166
County Seat:	Fairplay

flows throughout Park County, is considered a high risk for flooding.

There are five Class I and three Class II dams located in Park County. All Class I dams have emergency preparedness plans in place.

Park County south of Fairplay has one of the highest densities of sinkholes that are manifested at the surface in Colorado.

The following communities participate in the **National Flood Insurance Program**: Park County (unincorporated areas) and the Town of Fairplay.

Disaster Declaration History:

1995	State	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow



Eleven Mile Reservoir State Park
Photo from Colorado State Parks website

PHILLIPS COUNTY

Phillips County is located in the northeastern region of the State and is adjacent to the Nebraska border. Phillips County participated in and is included in the **Northeastern Colorado Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process the County identified windstorms, winterstorms, and lightning as the highest hazard risks to the County.

Windstorms-Phillips County is subject to high non-tornadic winds as well as tornadic winds. Between 1953 and 2003, 30 tornadoes and 39 high wind events have been documented in the County. Due to the vast open space in the County, many of these tornadoes caused little or no damage.

Lightning-History show that most of the wildland/grassland fires in Colorado are caused by lightning strikes. Colorado ranks 11th in the U.S. in both injuries and deaths caused by lightning.

Winterstorms-Severe winterstorms are not only likely in northeastern Colorado, they are expected each winter. Phillips County often experiences winter storms so severe they paralyze communities and strand passing motorists. Due to the rural nature of the county, communities and individuals may become isolated at these times.

Additional Information-Due to severe spring snowstorms in April 2001, Phillips County was one of 14 counties included in the May 2001 presidential disaster declaration. The plains counties incurred over \$6 million in damages as a result of storms over two weekends. Broken power poles and downed power lines left thousands without power for days.

According to the Colorado State Forest Service, in 1990 there was 1 subdivision, totaling 40 acres, in the urban/wildland interface area.

Five flash floods were recorded between 1997 and 2002 in Holyoke, Amherst and Haxton. The following communities participate in the **National Flood Insurance Program**: Phillips County (unincorporated areas), the City of Haxton, and the Town of Holyoke.

Population (2000 census):	4,480
Percent Growth from 1990:	6.9%
County Size (square miles):	680
County Seat:	Holyoke

Disaster Declaration History:

1980/1	State	Grasshopper Infestation
1990	USDA Disaster	Drought
1995	State	Flooding
1997	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storm
2002	USDA Disaster	Drought

Potential Mitigation Projects:

- Obtain Storm Ready certification
- Target insurance education for the 67 uninsured flood prone properties in the County
- Integrate the concept of mitigation into the County Comprehensive Plan
- Conduct grassfire defensible space public information campaign
- Identify flood hazard areas for unincorporated county areas (no maps currently exist)

PITKIN COUNTY

Pitkin County is located in the western mountainous region of the State.

Flood-From 1995 to 2003, 12 flood events were reported. Areas near the Roaring Fork River in the Aspen vicinity are at high risk from flooding. Aspen and Snowmass Village suffered damage to roadways, bridges, recreation facilities, and public property from flooding and mudslides during the flooding of 1984. In 1997, four miles west of Snowmass a flash flood produced a mud slide which completely buried a 30 foot stretch of Highway 82 near Basalt with mud two to four feet deep. It took road crews nearly seven hours to clear the highway. In 1999, heavy rains resulted in two flash floods up to six foot deep across State Hwy 133 causing \$150,000 in damages.

The following communities participate in the **National Flood Insurance Program**: Pitkin County (unincorporated areas including Redstone), the City of Aspen, and the Towns of Snowmass Village and Basalt.

Additional Information-There are two Class I and four Class II dams located in the County. All Class I dams have an emergency preparedness plan in place.

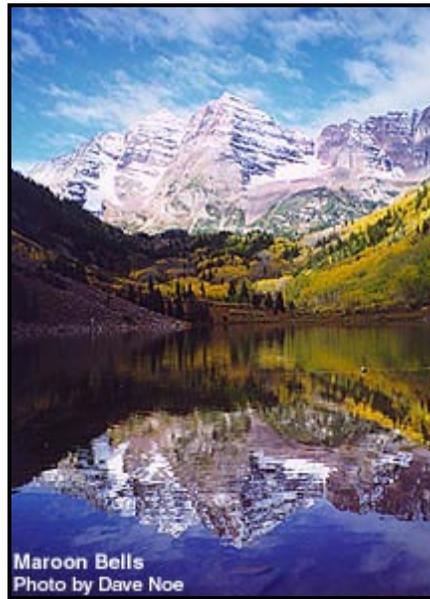
The Colorado State Forest Service reports in 1990 there were 331 subdivisions, totaling 41,536 acres in the urban/wildland interface area. The County participates in the **Emergency Fire Fund**.

According to the October 1, 2003 **Community Rating System Eligible Communities List**, Pitkin County is rated eight.

Population (2000 census):	14,872
Percent Growth from 1990:	17.5%
County Size (square miles):	974
County Seat:	Aspen

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires



Maroon Bells
Photo by Dave Noe

Photo by Dave Noe
Colorado Geological Survey

PROWERS COUNTY

Prowers County is located on the Arkansas River in the southeastern corner of Colorado, adjacent to the Kansas border. The County is primarily rural with an agriculturally based economy. Prowers County developed and is included in the **Prowers County Pre-Disaster Mitigation Plan**. Through the hazard analysis and risk assessment process, County emergency management personnel identified flood, winterstorm, drought and tornado as the hazards that pose the most risk to the County.

Flood-Floods have occurred frequently throughout Prowers County, eleven between 1995 and 2003. The Arkansas River Valley has experienced major flood events in 1921, 1951 and 1965. The 1965 flood approached the 500-year flood event classification and produced severe damage along the Valley and impacted communities from Lamar to Dodge City, Kansas. Heavy rains from a severe thunderstorm caused flash flooding. Parts of Hwy 253, south of Lamar, were closed due to high water. The following communities participate in the **National Flood Insurance Program**: Prowers County (unincorporated areas), The City of Lamar, and the Towns of Granada, Holly, and Wiley.

Winterstorms-Prowers County has experienced several winterstorms ranging in intensity from extreme cold with no moisture to a raging blizzard. Thirty-six heavy snow events were documented between 1993 and 2003. In 1997 a storm front moved across Prowers County depositing as much as 40 inches of wind-driven snow. The snow had a severe effect on structures, power lines and trees. The most significant loss was livestock and crop damage. An estimated 4, 975 head of cattle died in the County during the blizzard along with an estimated crop loss of \$6.6 million.

Drought-Drought has been an all too familiar part of Prowers County history. Since the economy of Prowers County is so closely tied to Agri-business, the economic impact is considered severe.

Tornado-Between 1958 and 2003, 66 tornados and 63 high wind events were reported in the County. The geographic location of the County makes it particularly vulnerable to tornados. Occurrences have been documented in or near Wiley, Lamar, Bristol, Granada and Holly. Beyond tornadoes, Prowers County is subject to potentially destructive straight-line winds. High winds are common throughout the County, throughout the entire year.

Population (2000 census):	14,483
Percent Growth from 1990:	8.5%
County Size (square miles):	1,626
County Seat:	Lamar

Disaster Declaration History:

1997	State	Blizzard
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	USDA Disaster	Drought

Potential Mitigation Projects:

- Improved Emergency Warning Systems
- Update FIRM maps
- Guide development and use of floodplain development regulations
- Conduct engineering evaluation for flood proofing buildings
- Acquisition of flood prone properties
- Obtain StormReady certification
- Expand public knowledge about NOAA weather radio
- Improve water conservation practices
- Floodplain insurance education to local Realtors and lending institutions

PUEBLO COUNTY

Pueblo County is located in the southern region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, county emergency management personnel identified winterstorms, flood, fire and hail storms as the hazards that pose the most risk to the County.

Winterstorm-Winterstorms can cause road closures and strand motorists (many on Highway 119). Heavy snows can bring a community to a standstill by inhibiting transportation, knocking down utility lines and by causing structural collapse. Repair, removal and rescue costs can be significant.

Flood-From 1994 to 2003, 18 flood events were reported causing one death, 7 injuries and over \$54 million dollars in property and crop damage. Situated at the confluence of the Arkansas River and Fountain Creek, the City of Pueblo is especially vulnerable to flooding. In 1921, the Arkansas River flooded; 120 were killed and property damages exceeded \$19 million. Flooding of Fountain Creek (1965) resulted in \$3.7 million in property damage. The St. Charles River, which runs through several other small towns in the county, is considered a high risk flood area. Wildhorse, Dry Creek, Huerfano River, Salt Creek, and the Goodnight Arroyo are also at risk for flooding. The Army Corps of Engineers has assisted with mitigation projects throughout Pueblo to lessen flood risks. In addition, non-structural mitigation steps, such as zoning regulations, have been taken to lessen Pueblo's vulnerability. The county successfully competed for hazard mitigation funds for an early warning system. Flooding in 1999 caused over \$32 million in property and crop damage in and around the City of Pueblo. The following communities participate in the **National Flood Insurance Program**: Pueblo County (unincorporated areas), the Town of Boone, and the City of Pueblo.

Wildland Fire-The Colorado State Forest Service figures show in 1990 there were 17 subdivisions, totaling 11,520 acres, in the urban/wildland interface area. The County participates in the **Emergency Fire Fund**.

Hail-Hail produced from thunderstorms can be devastating to an agriculturally based community. One hundred and eighty-one occurred between 1958 and 2003. A hailstorm in 1993 caused \$50 million in property damage. A hailstorm in July of 2000 caused more than \$16 million in damage to

Population (2000 census):	141,472
Percent Growth from 1990:	15.0%
County Size (square miles):	2,401
County Seat:	Pueblo

croplands in the County and resulted in an agricultural disaster declaration.

Additional Information-Three Class I and three Class II dams are located in the County. All Class I dams have emergency preparedness plans in place.

Disaster Declaration History:

1994	Local	Flooding
1999	Presidential	Flooding
2000	USDA Disaster	Drought/Hail
2002	Presidential	Wildfires
2003	Presidential	Snow Emergency



Lake Pueblo Reservoir State Park
Photo from Colorado State Parks website

RIO BLANCO COUNTY

Rio Blanco County is located in northwestern Colorado, roughly 250 miles west of Denver. The economy of the county is based mostly on the use and development of natural resources. Presently, the mining of coal, oil and natural gas, and the appreciation of wildlife and scenic beauty provide the foundation of economic activities within the county. Rio Blanco County participated in and is included in the **Rio Blanco County Pre-Disaster Natural Hazards Mitigation Plan**. Through the hazard analysis and risk assessment process, wildfire, flooding and ice jams are identified as the hazards most frequently occurring in the county.

Wildland Fire-Rio Blanco County has some of the highest risk indexes for probability of wildfire events and the impact from those events as any county within the State of Colorado. Thirty wildland fires have been recorded between 1998 and 2003. During normal years wildfire starts are numerous in the western end of the county. According to the Colorado State Forest Service, in 1999 there were 39 subdivisions, totaling 1,229 acres, in the urban/wildland interface area. The threat is to mining and oil and gas infrastructure and some areas around Meeker. In 2002, wildfires consumed over 14, 000 acres. The county participates in the **Emergency Fire Fund**.

Flood-Fifteen flood events between 1996 and 2003 have been documented, most of them in the Meeker area. Three primary forms of flooding have been recorded in Rio Blanco County. These are 1) spring thaw snowmelt, 2) monsoonal flash flood, and 3) ice jamming during extreme winter cold events. When spring arrives a snow melt begins that rapidly escalates as it warms. The resulting high water run off period can present very real flooding issues. The largest recorded flood in the county's history occurred during spring flows along the White River in 1984. The magnitude of flash flooding events in the County are significant. These events are the cause of serious erosion, property damage, and impacts to infrastructure.

The following communities participate in the **National Flood Insurance Program**: Rio Blanco County (unincorporated areas) and the Towns of Meeker and Rangely.

Ice Jam-Ice jamming occurs along the White River every year and most of the time has little or no impact on property or infrastructure. The flooding that results occurs annually on portions of agricultural property.

Population (2000 census):	5,986
Percent Growth from 1990:	-1.1%
County Size (square miles):	3,263
County Seat:	Meeker

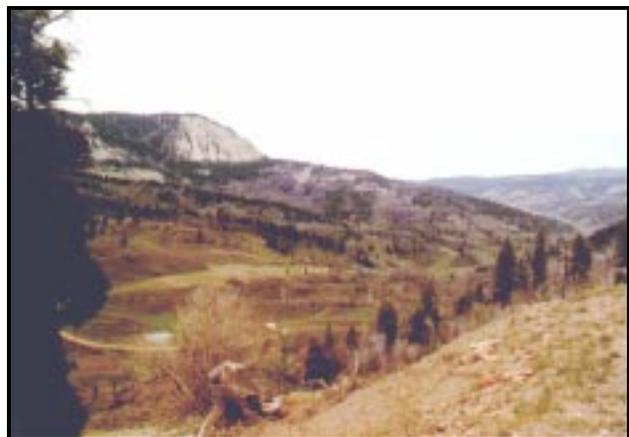
Additional Information-There are two Class I dams and three Class II dams.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

- Research and develop a project with the specific goal of defining the nature of "flash flooding" and its impacts in western RBC
- Conduct a study to determine the extent of erosion of sediment into Kenny Reservoir and the impact to the floodway
- Develop erosion control projects
- Create a "watershed group" to develop an action plan
- Digitalize floodplain maps
- Conduct flood hazard study in Rangely
- Implement soil erosion mitigation activities on County Road 7
- Develop a comprehensive plan to address flood proofing communities



Rio Blanco County North of Douglas Pass
Photo by Loyse Hinkle, Department of Natural Resources

RIO GRANDE COUNTY

Rio Grande County is located on the western border of the San Luis Valley. The most heavily populated area of the County is located along the river valley and the valley floor that comprises the eastern portion of the County.

Flooding-There is a yearly potential for flooding in Rio Grande County that generally results from a combination of snowmelt and rainstorms. The first recorded flood occurred in 1884, with the County experiencing a total of 10 serious floods in the past hundred years. The Towns of South Fork, Del Norte, and Monte Vista, as well as many other small communities, are subject to flooding. The Town of South Fork has had two flash flooding events in 2003.

The following communities participate in the **National Flood Insurance Program**: Rio Grande County (unincorporated areas), the City of Monte Vista, and the Towns of Del Norte and South Fork.

Winterstorm-Winter storms occur from October to May, but residents have adapted to this danger. Storms significantly affect motorists passing through the County as they may become stranded or involved in accidents. Road closures can isolate individual residences or entire communities. Power failures are common and may complicate this situation.

Drought-Drought threatens the entire County. During these times, mountainous areas are at higher risk of wildfire and agricultural (valley) areas can suffer from livestock and crop loss.

Wildfire-Approximately 50% of the County is in the wildland and forest fire danger zone. Over the past several years, many residences have been built in these areas enlarging the urban/wildland interface area. The Colorado State Forest Service reports in 1998 there were two subdivisions, totaling 400 acres, in the urban/wildland interface area. In 2002, the Million Fire began on June 19th and was officially controlled by August 1st. The fire consumed 9,346 on National Forest property. Total suppression costs were over \$9 million dollars. The County participates in the **Emergency Fire Fund**.

Tornado-Between 1993 and 2003, 3 tornado events were reported. Although funnel clouds are sighted each year, there has been no significant damage from a tornado in the County. Fourteen hail events were recorded in the County between 1955 and 2003.

Population (2000 census):	12,413
Percent Growth from 1990:	15.3%
County Size (square miles):	916
County Seat:	Del Norte

Additional Information-There is one Class I dam and one Class II dam located in the County. The Class I dam has an emergency preparedness plan in place.

Rio Grande County was in the **Project Impact Program** with five other counties from the San Luis Valley. The Valley entered the program in 2000.

Disaster Declaration History:

1995	State	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

ROUTT COUNTY

Routt County is located in the northwestern region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified winterstorms and fire as the hazards that pose the most risk.

Winterstorm-Heavy snow, ice, severe winter storms, and blizzards are common to northwestern Colorado causing road closures, school cancellations and power outages.

Wildland Fire-There has been an increase in development of urban/wildland interface areas. Between 1999 and 2003, 21 wildland fires were recorded. Colorado State Forest Service figures report in 1999 there were 109 subdivisions, totaling 33,027 acres, in the urban/wildland interface. In the summer of 2002, the Mount Zirkel Complex was comprised of the Burn Ridge and Hinman fires. These were lightning caused fires located in the Routt National Forest/Mount Zirkel Wilderness Area. The fires consumed over 31,000 acres of timber. The cost of fighting the fire was \$13.3 million. The County participates in the **Emergency Fire Fund**.

Additional Information-Several rivers and creeks in the Steamboat Springs area are listed as high flood hazard areas including the Yampa River, Soda Creek, Butcher Knife Creek, and Fish Creek. Routt County was included in the presidential disaster declaration for the flooding during 1984. Landslides and flooding caused road and bridge damage along Wolf and Oak Creeks and the Snake River. Between 1998 and 2003 there have been two flood events reported.

Flooding-In Hayden, floodwaters in Dry Creek washed out the approach to the Third Street Bridge. Oak Creek, flowing through the town of the same name, was transformed into a raging torrent destroying the Town's water source, sewer lines, culverts, and recreational facilities. Damages exceeded \$250,000. In Steamboat Springs, a flood-fighting effort using over 10,000 sandbags protected the Town from serious flood damage.

The following communities participate in the **National Flood Insurance Program**: Routt County (unincorporated areas), Hayden, Oak Creek, Steamboat Springs, and Yampa.

There are nine Class I and three Class II dams located in the County.

Population (2000 census): 19,690
Percent Growth from 1990: 39.8%
County Size (square miles): 2,330
County Seat: Steamboat Springs

According to the October 1, 2003 **Community Rating System Eligible Communities List**, the Town of Steamboat Springs is rated nine.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought



Pearl Lake State Park
Photo from Colorado State Parks website

SAGUACHE COUNTY

Saguache County is located in the San Luis Valley region and is surrounded by mountains. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified winterstorms, drought, wind, hail and fire as the hazards that pose the most risk to the County.

Winterstorm-Winter and spring weather cause problems for people in the County. Residents have adapted to winter storms, but travelers often become stranded and require rescue and shelter.

Drought-Drought severely affects the agriculture base of the County. Most years, the high water table offsets a lack of precipitation, but an extended period of low precipitation could tax the water table and affect community wells, residential wells, and irrigation.

Wildland Fire-All areas of the County are prone to wildfire. According to the Colorado State Forest Service, in 1999 there were two subdivisions, totaling 15,100 acres, in the urban/wildland interface. The County participates in the **Emergency Fire Fund**. The fire fighting community of Crestone has done risk assessments on properties in their area. Property owners are encouraged to complete fire mitigation activities.

Windstorm/Hail-Spring and summer bring severe thunderstorms that produce flash flooding, windstorms, hail, heavy rain, and tornados. In 1991, a tornado touched down east of the town of Saguache. A hailstorm in 1994 damaged structures and destroyed crops. Damage from this storm was estimated at over \$500,000. The heavy rains that can accompany these storms may cause flash flooding in several drainages. There were 25 hail events recorded between 1973 and 2002.

Additional Information-Saguache County is located over the Rio Grande Rift so earthquakes may occur. There are no high hazard dams located in Saguache County. There is one class II dam.

Saguache County was in the **Project Impact Program** with five other counties from the San Luis Valley. The Valley entered the program in 2000.

Population (2000 census):	5,917
Percent Growth from 1990:	28.1%
County Size (square miles):	3,144
County Seat:	Saguache

Disaster Declaration History:

1995	State	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow

SAN JUAN COUNTY

San Juan County is located in the southwestern region of the State.

Population (2000 census):	558
Percent Growth from 1990:	-25.1
County Size (square miles):	392
County Seat:	Silverton

Flood-The Animas River flows south near Silverton just outside the City's limits. Flooding occurs in the spring from snowmelt and in the summer and fall from severe rainstorms. Several buildings located in the Animas River floodplain have been affected by high water. Tourists, campers, and others using the back country are at risk from flooding. From 1997 to 2003, four flood events have been reported. In 1999, three flash flood events occurred in the Town of Silverton. One of the flash floods brought down a large volume of rocks and debris on U.S. Highway 550 at the southern base of Red Mountain Pass causing the highway to be closed for several hours. The following communities participate in the **National Flood Insurance Program**: San Juan County (unincorporated areas) and Silverton.

Winterstorm-Severe winter storms and avalanches are a problem throughout the County. Fifty heavy snow events have been recorded in the County between 1994 and 2004, resulting in three deaths and five injuries. Danger from avalanches increases due to the rise in use of back country areas during the winter months. Zoning regulations are in place to prevent development in avalanche zones.

Landslide-Landslides and mudslides are common occurrences in San Juan County due to the steep mountainous terrain. The potential for slides is heightened by heavy rains, snowmelt, and wildfire ravaged hillsides.

Additional Information-Colorado State Forest Service figures show as of 1999 there was one subdivision, totaling 185 acres, in the urban/wildland interface area.

Disaster Declaration History:

2000	USDA Disaster	Drought
2002	Local	Fire
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires

SAN MIGUEL COUNTY

San Miguel County is located in the southwestern region of the State.

Population (2000 census):	6,594
Percent Growth from 1990:	80.5%
County Size (square miles):	1,283
County Seat:	Telluride

Flood-The risk of flooding is greatest in the eastern portion of the county where population growth and suburban development have altered natural drainage systems and can contribute to unpredictable flash floods during storm water runoff. Due to steep terrain, most of the county creeks and drainages are susceptible to flooding. From 1996 to 2003, 16 flood events were recorded resulting in \$580,000 in property damage. In 1999 and 2001 heavy rains resulted in widespread flash flooding. The heavy rains triggered numerous mud and rockslides throughout the eastern portion of the County. The following communities participate in the **National Flood Insurance Program**: San Miguel County (unincorporated areas) and the Towns of Norwood and Telluride.

Wildfire-Wildfire, long considered a hazard in this area, is becoming more of a risk as more people move into urban/wildland interface areas. There were six wildfires in 2002 and 2003. The Colorado State Forest Service reports in 1999 there were 12 subdivisions, totaling 5,000 acres, in the urban/wildland interface. The County has completed a multi-year project to create detailed wildfire and geohazards maps. The County participates in the **Emergency Fire Fund**.

Avalanche-Avalanches pose threats to back-country recreationists and some towns in San Miguel County. Much of Telluride, for example, is located in the path of historical avalanche chutes.

Additional Information-There are five Class I dams located within the County. All Class I dams have emergency preparedness plans in place.

According to the October 1, 2003 **Community Rating System Eligible Communities List**, the Town of Telluride is rated seven.

Disaster Declaration History:

1984	Presidential Disaster	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

SEDGWICK COUNTY

Sedgwick County is located in the northeast corner of the State. Sedgwick County participated and is included in the **Northeastern Colorado Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process the County identified wind storms, winterstorms, flooding, drought and lightning as the highest hazard risks. Clearly, Sedgwick County has been subject to a wide variety of disasters. History of declarations indicate that flooding and drought were the most frequent hazards generating disaster declarations.

Flood-Four flood events have been recorded between 1998 and 2002. Heavy rain, producing local flooding, occurs occasionally in this area. In 1980, Sedgwick County experienced severe rains that resulted in a state declared disaster. Most damage from this flooding was to agricultural property and related facilities. The Towns of Sedgwick and Julesburg participate in the **National Flood Insurance Program**.

Winterstorm-Sedgwick County is often hit by blizzards causing road closures and utility failures. Eleven heavy snow events occurred between 1993 and 2003. These storms may isolate individuals and communities and kill livestock. In 2001, the plains counties incurred over \$6 million in damages as a result of winterstorms over two weekends resulting in a presidential disaster declaration. Broken power poles and downed power lines left thousands without power for days.

Windstorm/Tornado-Tornados pose a significant hazard to the entire County. Twenty-nine have been documented from 1950 to 2003, and 63 thunderstorm and high wind events. In 2002, hail and high winds caused 80% loss of beet crop, 75% of beans and soybeans, and 20 buildings and 40 vehicles were damaged. Sixty-seven hail events have been recorded in the County between 1959 and 2003.

Drought-Drought significantly affects Sedgwick County's communities because they are agricultural in nature. During periods of severe drought, crops and livestock suffer, as well as individual and community water supplies. During this time, the risk of grass fires increases drastically.

Population (2000 census):	2,747
Percent Growth from 1990:	2.1%
County Size (square miles):	544
County Seat:	Julesburg

Lightning-Grassland fires occur frequently throughout the area. The fires are predominantly ignited by either lightning, sparks from a breaking train, or cigarettes discarded from automobiles traversing the County roadways. Fires have grown to 16,000 acres, but losses have been minimal. Significant grass-fires have occurred in 1903, 1908, 1910, 1916 and 1917.

Additional Information- There is one Class I dam in Sedgwick County.

According to the Colorado State Forest Service, in 1990 there were three subdivisions, totaling 180 acres, in the urban/wildland interface area.

Disaster Declaration History:

1965	Presidential Disaster	Flooding
1969	Presidential Disaster	Flooding
1980/1	State	Grasshopper Infestation
1980	State	Flooding
1990	USDA Disaster	Drought
1999	Local	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	USDA Disaster	Drought

Potential Mitigation Projects:

Promote the NFIP for the community of Ovid
Obtain Storm Ready certification
Identify where sirens/NOAA weather repeaters are needed

SUMMIT COUNTY

Summit County is located in the northwest region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified winterstorm, windstorm and hail as hazards threatening the Summit County area.

Winterstorm-Heavy snow, ice, severe winter storms and blizzards are common to northwestern Colorado causing road closures, school cancellations and power outages. One-hundred and thirty-five heavy snow events have been documented between 1993 and 2003. In March 2002, March 2003, and March 2004, one death occurred each year as a result of avalanche.

Windstorm-Windstorms are common and impact Summit County annually. Duration and wind speed have resulted in property damage. Thirty-three high wind events were recorded in the County between 1995 and 2003.

Hail-Hail forms during thunderstorms, and Colorado has more thunderstorm days than any other state except Florida. The State's high mountains and high elevation increase the likelihood that hail will form in a thunderstorm, making Colorado one of the hail capitals of the world.

Additional Information

A large portion of the economy in Summit County is based on tourism; therefore, planning for hazards is complicated by the need to address the safety of visitors. Wildfires are a threat, particularly during dry seasons. Much of the County is National Forest land and is used extensively for recreation. Colorado State Forest Service figures show in 1999 there were 395 subdivisions, totaling 17,166 acres, in the urban/wildland interface area. The County participates in the **Emergency Fire Fund**.

There are five Class I dams in Summit County. All Class I dams have emergency preparedness plans in place.

Flood-A high flood risk classification is given to the Upper and Lower Blue River. Flooding could threaten Silverthorne and Breckenridge. Ten Mile Creek, also listed as a high risk, threatens the towns of Frisco and Copper Mountain.

Population (2000 census):	23,548
Percent Growth from 1990:	82.8%
County Size (square miles):	612
County Seat:	Breckenridge

The following communities participate in the **National Flood Insurance Program**: Summit County (unincorporated areas) and the Towns of Breckenridge, Frisco, and Silverthorne.

According to the **Community Rating System Eligible Communities List** of October 1, 2003, The Town of Frisco was rated eight and the Town of Silverthorne was nine.

Disaster Declaration History:

1995	State	Flooding
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

TELLER COUNTY

Teller County is located in the south central region of the State. In a risk assessment survey conducted by the Colorado Division of Emergency Management in 2003/2004, County emergency management personnel identified winterstorm and fire as hazards threatening the Teller County area.

Winterstorm-Seventy-nine heavy snow events occurred between 1993 and 2003. Winter storms increase the risk of roadway accidents and cause road closures and power failures. Often these storms are powerful enough to strand motorists necessitating search and rescue efforts.

Wildfire-Wildfire occurs almost annually due to natural and human causes. A large portion of the County is heavily utilized for recreational purposes including National Forest lands and the Florissant Fossil Beds National Monument. The urban/wildland interface is growing in this County putting increasing numbers of people at risk. According to the Colorado State Forest Service, in 1999 there were 58 subdivisions, totaling 22,810 acres, in the urban/wildland interface area. From 2002 to 2003 there were three wildfire events reported resulting in four injuries and over \$12 million dollars in property damage. The Hayman Fire, the largest wildfire in Colorado history, consumed 137, 760 acres, resulted in 16 injuries and five deaths. Due to its mountainous location, the County is subject to a particularly large number of lightning strikes each year. The County participates in the **Emergency Fire Fund**.

Additional Information

Flooding-The potential for flash flooding on any of Teller County's drainages is heightened every year in the spring and summer when heavy rainfalls can rapidly escalate into dangerous floods. Ten flood events have been recorded between 1997 and 2004 in the County. Four Mile Creek has experienced flash flooding several times over the past 20 years. As recently as July 2004, Teller County experienced flooding causing damage and roads to be washed out. The following communities participate in the **National Flood Insurance Program**: Teller County (unincorporated areas), the Town of Woodland Park, and the City of Cripple Creek.

There are four Class I and ten Class II dams located in the County. All Class I dams have emergency preparedness plans in place.

Population (2000 census):	20,555
Percent Growth from 1990:	64.9%
County Size (square miles):	554
County Seat:	Cripple Creek

Earthquake- Although Teller County is considered to be at low risk for an earthquake of damaging magnitude, it is located over several faults. Near the town of Divide a 2.9 earthquake was recorded in January 1979.

Disaster Declaration History:

1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought
2003	Presidential Emergency	Snow



Mueller State Park
Photo from Colorado State Parks website

WASHINGTON COUNTY

Washington County is located in the northeastern region of the State in the great plains. Washington County participated and is included in the **North-eastern Colorado Emergency Management Association Hazard Mitigation Plan**. Washington County has primarily been subject to disaster declarations as a result of drought and flooding.

Flood-Washington County faces the threat of flash flooding because of extensive spring and summer rains. Eleven flash floods have been recorded between 1995 and 2003. Due to drainage problems inherent in the County, water does not readily recede. The South Platte River (north of Akron), Sand Creek, Gordon Creek, and Hell Creek hold the potential for flash flooding. In August 2002, two separate thunderstorms triggered flash flooding over southeastern Washington County. Five county roads were washed out during the storm and resulted in \$100,000 in property damage. The flooding occurred on State Highway 63, north of Akron, and along County Road 57. The Towns of Otis and Akron participate in the **National Flood Insurance Program**.

Drought-Washington County is primarily agricultural and drought would have a severe economic impact. Washington County is entering its fourth year of drought. 2002 was the driest year on record for Washington County and much of the State.

Tornado-Ninety-one tornados have been recorded in the County since 1952. A 1996 tornado in Elba caused over \$300,000 in property damage.

Thunderstorm-Eighty-four thunderstorms and high wind events were recorded between 1955 and 2003. In 2001, Washington County was the second county to successfully receive a **StormReady** designation from the National Weather Service.

Additional Information- There is one Class I dam located in the County. The dam has an emergency preparedness plan.

The Colorado State Forest Service reported in 1990 there was one subdivision, totaling 40 acres, in the urban/wildland interface area.

Population (2000 census):	4,926
Percent Growth from 1990:	2.4%
County Size (square miles):	2,525
County Seat:	Akron

Disaster Declaration History:

1969	Presidential Disaster	Flooding
1980	State	Grasshopper Invasion
1981	State	Grasshopper Invasion
1990	USDA Disaster	Drought
1995	State	Flooding
1999	Local	Flooding
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Proposed Mitigation Projects:

- Obtain Storm Ready certification for communities in the county
- Improve emergency warning system capabilities
- Promote crop insurance campaigns
- Promote targeted flood insurance campaign in the Towns of Akron and Otis

WELD COUNTY

Weld County is in the northeast region of the State, adjacent to the Wyoming border. Weld County participated and is included in the **North-eastern Colorado Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process the County identified winterstorms, flooding, tornado, and drought as the highest hazard risks.

Flood-Flooding has resulted in the most disaster declarations for Weld County. Between 1994 and 2003, 21 flood events were recorded. In 1997 and 1999, Weld County was included in presidential disaster declarations due to heavy rains causing widespread flooding and damaging infrastructure. Devastating effects were also felt in the County in the floods of 1995. A 2001 flood in Greeley resulted in \$600,000 in property damage. The following communities participate in the **National Flood Insurance Program**: Weld County (unincorporated areas); the Towns of Ault, Dacono, Eaton, Erie, Firestone, Fort Lupton, Frederick, Hudson, Keenesburg, La Salle, Milliken, Nunn, Pierce, Platteville, and Severance; and the Cities of Evans, Greeley, and Windsor.

Winterstorms-Between 1993 and 2003, 32 heavy snow events were recorded in the County. In 2001, the plains counties incurred over \$6 million in damages as a result of storms over two weekends that resulted in a presidential disaster declaration. Broken power poles and downed power lines left thousands without power for days.

Tornado-Between 1950 and 2003, 220 tornados were reported in the County with most occurring in rural areas. Weld County has the highest number of tornadic events in the State. The County also had 435 hail events between 1955 and 2003 and 207 thunderstorm and high wind events between 1956 and 2003.

Drought-Weld County is in its fourth year of drought. 2002 was the driest year on record for Weld County and much of the state. Continued drought would be economically devastating to this agricultural community.

Additional Information-There are nine Class I and 17 Class II dams located in the county. All Class I dams have emergency preparedness plans.

Population (2000 census): 180,936
Percent Growth from 1990: 37.3%
County Size (square miles): 4,004
County Seat: Greeley

Colorado State Forest Service figures show in 1990 there were five subdivisions, totaling 180 acres, in the urban/wildland interface area.

Disaster Declaration History:

1973	Presidential Disaster	Flooding
1980	Presidential Disaster	Flooding
1982	State	Winterstorm
1986	State	Winterstorm
1990	USDA Disaster	Drought
1995	State	Flooding
1997	State	Blizzard
1997	Presidential Disaster	Flooding
1999	Presidential Disaster	Flooding, Mudslides, Landslides
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	USDA Disaster	Drought
2002	Presidential Disaster	Wildfires
2003	Presidential Emergency	Snow

Potential Mitigation Projects:

- Obtain Storm Ready certification
- Promote flood insurance campaign
- Research tornado safe room projects for building consideration
- Mobile home park acquisition and relocation

YUMA COUNTY

Yuma County is located in the northeastern region of the State. Yuma County participated and is included in the **Northeastern Colorado Emergency Management Association Hazard Mitigation Plan**. Through the hazard identification and risk assessment process the County identified winterstorms, tornado, and drought as the highest hazard risks.

Winterstorm-Severe weather is a year-round threat to Yuma County. Winter storms threaten traffic on roadways, isolate individuals and communities, and cause livestock losses. Eighteen heavy snow events have been recorded between 1993 and 2004. A 1995 early winterstorm caused over \$5 million in crop damage. In 2001, the plains counties incurred over \$6 million in damages as a result of storms over two weekends that resulted in a presidential disaster declaration. Broken power poles and downed power lines left thousands without power for days.

Tornado-Spring and summer bring the threat of severe thunderstorms accompanied by rain, flash flooding, hail, and tornados. Sixty-six tornados have been reported between the years 1954 and 2003. Between 1958 and 2003, eighty-five thunderstorm and high wind events were recorded in the County.

Drought-Yuma County is in its fourth year of drought. 2002 was the driest year on record for Yuma County and much of the State. A continued drought would be economically devastating to this agricultural community.

Flood-Ten floods have been recorded in the County between 1950 and 2003. A 1995 flash flood around Idalia and Hale resulted in approximately \$240,000 in property damage. Yuma County Road 52 and Highway 385 both had two to five feet of water and were closed for several hours.

The following communities participate in the **National Flood Insurance Program**: Yuma County (unincorporated areas), Wray and Yuma.

Hail-Two hundred eighty-five hail events were recorded in the County between 1958 and 2004. A 1998 hailstorm caused over \$1 million dollars in property and crop damage.

Additional Information-One Class I dam and seven Class II dams are located in the County. The Class I dam has an emergency preparedness plan.

Population (2000 census): 9,841
Percent Growth from 1990: 9.9%
County Size (square miles): 2,370
County Seat: Wray

Colorado State Forest Service figures show in 1990 there were 3 subdivisions, totaling 380 acres, in the urban/wildland interface.

Yuma County was the first county in Colorado to receive the **StormReady** designation from the National Weather Service. The County has completed several severe weather projects over the years, including getting a NOAA weather transmitter and purchasing and distributing NOAA weather radios to special needs populations.



Bonny Lake State Park
Photo from Colorado State Parks website

Disaster Declaration History:

1969	Presidential Disaster	Flooding
1981	State	Grasshopper Infestation
1990	USDA Disaster	Drought
2000	USDA Disaster	Drought
2001	Presidential Disaster	Winter Storms
2002	Presidential Disaster	Wildfires
2002	USDA Disaster	Drought

Potential Mitigation Projects:

Upgrade and replace emergency warning sirens
Build tornado safe shelter
Relocate fire station out of floodplain