

# Yuma County

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HAZARD MITIGATION PLAN ELEMENT DRAFT  
APRIL 19, 2021

2021

NORTHEAST COLORADO REGIONAL HAZARD MITIGATION PLAN

## Section One – Introduction

### Overview

The purpose of the ***Yuma County Plan Element*** is to provide Yuma County and political subdivisions within the county with a comprehensive hazard mitigation strategy for reducing long-term risks to people, property and natural resources. It is the intent of this plan to help ensure that Yuma County remains a safe place to live and work and to provide a framework for addressing potential future hazards through hazard mitigation planning.

***Hazard mitigation*** is defined by FEMA as “any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event.” Mitigation creates safer communities by reducing loss of life, risk of injury, property damage, and damage to the environment.

The ***Yuma County Plan Element*** is an annex of the ***Northeast Colorado Regional Hazard Mitigation Plan***. This Plan Element (“Plan”) is organized into the following sections:

- 1. Introduction – Overview and Community Profile***
- 2. Risk Assessment***
- 3. Capability Assessment***
- 4. Vulnerability Assessment***
- 5. Mitigation Strategy***
- 6. Maintaining and Updating the County Plan Element.***

### Participating Jurisdictions and Stakeholders

The jurisdictions and organizations that participated in the 2020 plan update process are identified in Table 1.1 below. *Participating Jurisdictions* that adopt the updated plan are eligible to receive federal hazard mitigation grant funds directly from FEMA. In addition to participating in the planning process and formally adopting the updated plan, Participating Jurisdictions must also identify specific mitigation actions for reducing risks from local hazards. *Stakeholders* are jurisdictions or organizations that participate in and have an interest in the planning process, but are not required to formally adopt the updated plan or identify mitigation actions. Stakeholders that identify specific mitigation actions may be the recipient of federal hazard mitigation grant funds, but are required to work through a Participating Jurisdiction that agrees to sponsor the project application.

**Table 1.1 Participating Jurisdictions and Stakeholders**

Participating Jurisdictions and Stakeholders	
City of Wray	Town of Eckley
City of Yuma	Wray School District RD-2
CSU Extension Services	Yuma Ambulance
Highline Electric Association	Yuma County*
Northeast Colorado Health Department	Yuma County Fire Protection District
Northeast Colorado Regional Emergency Trauma Advisory Council (RETAC)	Yuma Rural Fire Protection District
	Y-W Electric Association

\* Participating Jurisdiction

The Colorado Department of Public Safety, Division of Homeland Security and Emergency Management, provided technical planning guidance and support for the project. Staff from the National Weather Service in Goodland, Kansas also participated in the process by attending the planning workshop and reviewing draft plan updates.

### Planning Process and Public Involvement


A planning workshop was conducted on March 10, 2020, 10:00 AM - 12:00 PM, in Yuma to gather and evaluate information to include in the 2020 updates to the Yuma County Hazard Mitigation Plan Element. The workshop was attended by representatives of Yuma County and its local, state, regional and federal partners. The workshop was facilitated by a mitigation specialist from the Colorado Division of Homeland Security and Emergency Management and the contractor hired to coordinate the project. Prior to the workshop, a survey of Participating Jurisdictions and Stakeholders was conducted to collect initial information for updates to the Plan, including hazard events and mitigation efforts from the previous five years.

The survey and workshop provided two opportunities to (1) review and update the Risk Assessment and assess the vulnerability of community assets to local hazards, (2) review local mitigation capabilities and update the Capability Assessment, and (3) determine the status of 2015 Mitigation Actions and identify new opportunities and projects to include in the updated plan. The workshop was open to the public and citizens and volunteers were also provided an opportunity to review and comment on draft updates prior to final review by the Yuma County Hazard Mitigation Planning Team.

**Table 1.2 Yuma County Hazard Mitigation Planning Team**

Name	Position	Organization
Alex Astley	Manager of Engineering	Highline and Y-W Electric Associations
Andrea Calhoon	County Administrator	Yuma County
TC Combs	Sheriff	Yuma County
James DePue	City Manager	City of Wray
Mike Foor	Yuma County Pest Control	Yuma County
Ed Holicky	Meteorologist in Charge	National Weather Service
Keriann Josh	Paramedic	Yuma Ambulance
Levi Kramer	Executive Director of Education	Wray School District
Cliff Merritt	Transportation/Maintenance Manager	Wray School District
Jolynn Midcap	Area Extension Agent	CSU Extension Services
Scott Moore	City Manager	City of Yuma
Dan Overturf	Investigator	Yuma County Sheriff's Office
Tim Probasco	Board of Trustees	Town of Eckley
Jeff Schanhals	Regional Coordinator	Northeast Colorado RETAC
Elmer Smith	Firefighter	Yuma Rural Fire Protection District
Anne Templar	EMT	Yuma Ambulance
Kevin White	Police Chief	Wray Police Department
Roger Brown	Emergency Manager	Yuma County
Mark Thompson	Mitigation Planning Specialist	Colorado Division of Homeland Security and Emergency Management
Bob Wold	Consultant	Robert Wold Emergency Management Planning Services

## Community Profile

	Established	1889
	Land Area (Square Miles)	2,369
	County Seat	Wray
	Elevation Range	3,315'-4,445'
	Assessed Value (2019)	\$255,207,400
	Top Industry	Agriculture
	Population (2010)	10,043
	Population (2017)	10,109

## History

Yuma County was established by the Colorado General Assembly in 1889 from a portion of Washington County. Before then it was inhabited by various Native American groups, including the Arapaho, Cheyenne, Kiowa, and Pawnee tribes, and the name Yuma is derived from Native American language. Yuma was named the county seat of Yuma County, but in 1902 the county seat was moved to Wray after a new county seat election. The next year in 1903, Yuma County's borders were established as they exist today after a final piece of the county was partitioned from eastern Arapahoe County.

Named for cattleman John Wray, Wray began as an early cattle-trading post for ranchers and then in 1882 became a stop along the Burlington & Colorado (B&C) Railroad, which brought homesteaders and businesses to the settlement. The City of Wray was incorporated in 1906 and is a Home Rule Municipality.



Main St. in Wray in 1900 (then called Chief St.) and today (photo on left: W.B. Coston Collection)

Also located on the B&C Railroad line, the settlement of Eckley was surveyed in 1882 and platted by the Lincoln Land Company in 1889. A well nearby helped sustain the community, which soon had a hardware store, two grocery stores, a pool hall, church, post office and two grain elevators. Eckley was incorporated as a Statutory Town in 1920.

Yuma was surveyed in 1885, platted in 1886 and incorporated in March 1887. Today, the City of Yuma is a Home Rule Municipality and the most populated community in Yuma County. The

city is the hub of the strong agriculture-based economy of western Yuma County and the hometown of U.S. Senator Cory Gardner.

## Geography

Yuma County is located in the Great Plains of northeastern Colorado and is bordered by four Colorado counties, two Nebraska counties and one county in Kansas. Yuma County covers an area of approximately 2,369 square miles and has an average elevation of 4,200 feet. Land use is divided almost evenly between ranching and farming.

Yuma County measures 60 miles north to south and 40 miles east to west. Wray, the county seat, is located in eastern Yuma County along the North Fork of the Republican River and US Highway 34. The City of Yuma is located in western Yuma County at the intersection of US 34 and State Highway 59. The town of Eckley lies between Yuma and Wray along US 34.



*Yuma County is the top producer of corn in Colorado and has a strong tradition in agriculture (photo on right: Farmers Produce Co. in Wray, 1925, from the W.B. Coston Collection)*

The landscape of Yuma County is predominately rolling prairie, sand hills and farmland. The Ogallala Aquifer supplies water for irrigation and Yuma County is the top corn-growing county in the state, in addition to producing significant amounts of poultry and eggs, winter wheat, hay, potatoes, melons, and sweet potatoes. Yuma County is also the state's top supplier of hogs and pigs and annually ranks near the top in cattle and calf raising. According to the 2017 Census of Agriculture, there are 774 farms in Yuma County covering 1,400,296 acres. The average farm size is 1,809 acres.

## Climate

According to the Colorado Climate Center, the climate of Yuma County is characterized by low relative humidity, frequent sunshine, infrequent moisture, moderate to high winds, and temperature extremes that range from zero to -15°F in winter months to daily maximum temperatures of 95°F or above during the summer. Between 2015 and 2019, the average high temperature was 67°F and the average low temperature was 37°F. The average annual precipitation for Yuma County for the same period ranged from 15.03 inches (2019) to 23.29 inches (2018) and the average annual snowfall ranged from 17.3 inches (2019) to 39.6 inches (2016). Precipitation is seasonal, with most of the annual total (70-80%) falling during the growing season from April through September.

Large thunderstorms are common in the spring and summer months and capable of producing small- to medium-size tornadoes, crop-damaging hail, and heavy rainfall that can result in localized flood events. Although winter weather is generally dry, severe winter weather events are fairly common, including blizzards and wind-blown snow that results in closed highways



and isolated communities and rural residents. Fall is the most stable time of year for weather conditions, with much cooler temperatures and very low humidity levels for most of the season. Multi-year drought is common to the area, such as the intense widespread drought of the early 2000s.

## Population

Yuma County experienced a slight increase in population since 2010, from 10,032 in 2010 to a total population in 2017 of 10,109 (0.77% increase). The population of the City of Yuma grew very slightly during the period from 3,520 in 2010 to 3,526 in 2017 (0.17% increase) and the population of Wray grew from 2,340 to 2,488 (6.32% increase). The largest percentage growth was in the small community of Eckley, from 257 in 2010 to 330 in 2017 (28.40%). Other population characteristics for Yuma County from the 2017 U.S. Census are shown in the following table.

**Table 1.3 Population Characteristics**

Population Characteristics	Yuma County	Eckley	Wray	Yuma
Population (2017)	10,109	330	2,488	3,526
Median Age	35.8	26.7	31.1	41.2
Population 65 Years and Over	1,779	34	348	852
Female Population	5,099	161	1,290	1,887
Male Population	5,010	169	1,198	1,639
Average Household Size	2.47	3.63	2.58	2.08
Average Family Size	3.20	4.52	3.67	2.79
Percent of Total Population with Disabilities	13.4	16.7	16.3	16.0
Residents with Disabilities less than 18 Years Old (%)	7.5	16.8	14.0	0.0
Residents with Disabilities 18-64 Years Old (%)	7.7	7.6	11.7	8.3
Residents with Disabilities over 65 Years Old (%)	41.8	61.8	41.6	47.5
Residents with Health Insurance Coverage (%)	86.7	98.5	87.4	85.5
Residents with High School Degree (%)	85.4	81.1	80.6	80.5
Residents with Bachelor's Degree (%)	21.0	8.1	16.1	24.3

U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Select economic and housing statistics for Yuma County for 2017 are provided in the table below.

**Table 1.4 Economic and Housing Characteristics**

Economic and Housing Characteristics	Yuma County	Eckley	Wray	Yuma
Median Household Income	\$44,668	\$42,344	\$39,998	\$41,404
Percent of Total Population that is Unemployed	2.4	14.3	2.3	2.0
Percent of Families Living Below Poverty Level	10.8	1.6	21.2	9.1
Percent of Individuals Living Below Poverty Level	14.3	8.5	19.1	12.3
Total Housing Units	4,489	108	1,000	1,720
Vacant Housing Units	436	17	63	50
Homeowner Vacancy Rate (%)	1.4	0.0	0.0	0.0

Rental Vacancy Rate (%)	3.5	0.0	0.0	7.5
Number of Businesses/Companies*	1,492	N/A	N/A	386

U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

\* 2012 Survey of Business Owners

## Section Two – Risk Assessment

**Risk** is the potential for damage, loss, or other impacts created by the interaction of natural or other types of hazards with community assets. The purpose of the **risk assessment** is to provide a better understanding of local risks and establish a framework for developing and prioritizing mitigation actions to reduce risk from future natural hazard events.

### Local Natural Hazards

The risk assessment matrix below reflects the results of the rating-ranking exercise conducted during updates to the plan in 2014 and 2020. **Probability** is defined by FEMA as the likelihood of the hazard occurring in the future, based on historical frequencies or statistical probability models. **Magnitude** refers to the scale or severity of a hazard event in terms of the impacts to public safety, critical infrastructure, private property, economic activity, natural resources and other community assets. **Significance** is a measure of the need for planning and mitigation action, based on the geographic extent, probability and magnitude of potential impacts.

Based on the recommendation of one survey respondent that was supported by workshop attendees, the Significance rating for **Dust Storms** was increased from *Medium* to **High** to take into account the fact that dust storms can be the deadliest type of weather in the High Plains (due to car accidents and respiratory problems). The Probability and Magnitude ratings for all other hazards in the table below were reviewed and validated and no further changes were made.

**Table 2.1 Yuma County Risk Assessment**

YUMA COUNTY HAZARDS	Geographic Extent	Probability	Magnitude	Significance
Biological Hazards: Pandemic	Extensive	Occasional	Critical	High
Biological Hazards: Pestilence	Extensive	Occasional	Limited	Medium
Biological Hazards: Zoonotic Diseases	Limited	Likely	Limited	Medium
Blizzards and Severe Winter Storms	Extensive	Likely	Critical	High
Dam Failures/Levee Failures	Limited	Likely	Limited	Medium
Drought	Extensive	Likely	Critical	High
Dust Storms	Extensive	Likely	Limited	High
Earthquake	Limited	Occasional	Limited	Low
Flooding	Significant	Likely	Critical	High
Fog	Significant	Likely	Negligible	Low
Hailstorms	Extensive	Highly Likely	Limited	High
Landslides	Limited	Occasional	Negligible	Low
Lightning	Extensive	Highly Likely	Limited	Medium
Noxious Weeds/Tumbleweeds	Extensive	Highly Likely	Negligible	Low
Straight-Line Winds	Extensive	Highly Likely	Limited	High
Temperature Extremes	Extensive	Highly Likely	Limited	Low
Tornadoes	Extensive	Likely	Critical	High

Wildland and Grassland Fires		Extensive	Highly Likely	Limited	High
Legend					
Geographic Extent	Extensive	50-100% of planning area.			
	Significant	10-50% of planning area.			
	Limited	Less than 10% of planning area.			
Probability	Highly Likely	Near 100% chance of occurrence each year.			
	Likely	10-100% chance of occurrence each year (recurrence interval: 10 yrs. or less).			
	Occasional	1-10% chance of occurrence each year (recurrence interval: 11-100 yrs.).			
	Unlikely	Less than 1% chance of occurrence each year (recurrence interval: >100 yrs.).			
Magnitude	Catastrophic	Mass casualties and/or illnesses; extraordinary levels of destruction and service interruptions; sustained impacts to infrastructure, government functions and the economy; local and state resources overwhelmed (>50% of property severely damaged).			
	Critical	Isolated deaths; multiple injuries and/or illnesses; major property damage; impacts to critical infrastructure; and/or disruption of essential services (25-50% of property severely damaged).			
	Limited	Minor injuries, manageable number of illnesses; minor property damage; and/or interruption of essential services for less than 24 hrs. (10-25% of property severely damaged).			
	Negligible	No injuries or illnesses; little or no property damage; brief disruptions of essential services (<10% of property severely damaged).			
Significance	High	Widespread potential impacts (planning and mitigation priority: high).			
	Medium	Moderate potential impacts (planning and mitigation priority: medium).			
	Low	Minimal potential impacts (planning and mitigation priority: low).			

### Significant Hazard Events in Yuma County, 2015-2020

On **May 7, 2016**, four tornadoes touched down near Eckley and Wray in Yuma County. One tornado north of Wray crossed US 385 north of the County Road 39 intersection and picked up and tossed a semi-truck and tore the roof off of a mobile home. There were four minor injuries as a result of the incident. The **Wray Tornado** path was a half-mile wide and approximately six miles long. The tornado occurred on an otherwise clear day and produced some spectacular photographs. The tornado also destroyed 40 power poles. The storm produced large hail measuring up to 2.5 inches in diameter. Total property damage was estimated to be at least \$135,000.



Two views of the May 7, 2016 Wray tornado in Yuma County (left photo: Bryce Kintigh; right photo: source unknown)



As the updates to this plan were being completed, the **2020 COVID-19 Pandemic** spread across the globe, United States and Colorado. COVID-19 is an infectious disease caused by the most recently discovered coronavirus that was unknown before the outbreak began in Wuhan, China in December 2019. The illness rapidly spread to other continents and on March 5, 2020, the Colorado Department of Public Health and Environment's (CDPHE) public health laboratory confirmed the first presumptive positive COVID-19 test result in Colorado. Soon thereafter, most areas in eastern and northeastern Colorado reported cases of the virus. Locations where groups of people congregate in confined spaces – nursing homes/assisted-care facilities, manufacturing plants, correctional facilities – were prime locations for rapid disease transmission. The crisis resulted in statewide “stay at home” and “safer at home” orders as well as orders closing certain businesses (e.g., restaurants, bars, gyms and non-essential retail stores) and prohibiting gatherings of 10 or more people in a confined space. Many local governments and health departments also instituted requirements relative to safe-distancing, wearing face masks and other protective measures.

The other hazard events that occurred in Yuma County between 2015-2020 were reviewed at the workshop and through the survey process and the most significant events during the period are summarized in the table below, with additional data from the National Centers for Environmental Information (NCEI) Storm Events Database.

**Table 2.2 Significant Hazard Events in Yuma County, 2015-2020**

Hazard Event	Date(s)	Impacts
<b>Blizzard</b>	March 23, 2016	Snowfall and high winds created whiteout conditions across Yuma County and closed highways; 5-8" snowfall with highest amount in and around the City of Yuma
<b>Blizzard</b>	January 21, 2018	10" of snow fell near Vernon, combining with high winds to create zero visibilities
<b>Blizzard</b>	April 13, 2018	3-9" snowfall combined with wind gusts greater than 60 mph caused widespread power outages
<b>Blizzard</b>	November 25, 2018	High winds and heavy snowfall, with the highest snowfall totals in eastern Yuma County (4.1" in Vernon)
<b>Blizzard</b>	January 22, 2019	Winds and approximately 3" of snow created whiteout conditions
<b>Blizzard</b>	March 13, 2019	Bomb Cyclone* caused severe straight-line winds, blowing/drifting snow, zero visibilities, power outages, and closure of area roads
<b>Blizzard</b>	April 11, 2019	High winds and blowing snow (up to 4" near Yuma)
<b>Flooding</b>	June 2, 2017	Heavy rainfall resulted in up to 18" of water covering CR 58 and CR N near Clarkville
<b>Hailstorm</b>	May 24, 2016	Thunderstorm produced 3" hail in Alvin
<b>Hailstorm</b>	July 29, 2019	Thunderstorm produced 4" hail in Clarkville (\$308,000 in crop damage)
<b>Hailstorm</b>	August 14, 2019	Thunderstorm produced 3" hail in Idalia and Vernon
<b>Hailstorms</b>	2015-2019	36 days with severe hail (hailstones measuring 1" in diameter or greater)
<b>Pandemic</b>	2020**	The COVID-19 pandemic was still at a crisis stage in Colorado as updates to this plan were completed in July 2020. Impacts to date

		in Yuma County include multiple confirmed cases, economic losses, and public health orders requiring social distancing.
<b>Tornado</b>	April 17, 2015	Rope tornado on the ground for several minutes (no damage reported)
<b>Tornado</b>	May 7, 2016	4 tornadoes touched down near Eckley and Wray; one tornado north of Wray crossed Hwy. 385 north of CR 39 intersection and picked up/tossed a semi-truck and tore the roof off of a mobile home; 40 power poles downed; 4 minor injuries; damages: \$135,000
<b>Tornado</b>	May 24, 2016	Tornado and high winds caused moderate damage to several homes and totally destroyed one hog farm 6 miles north of Yuma
<b>Tornado</b>	August 11, 2019	Brief tornado NW of Wray uprooted trees and snapped large branches (\$70,000 property damage)
<b>Tornadoes</b>	2015-2019	Multiple weak EFO tornadoes touched down briefly over open country with no damages (5-27-15/5-24-16/5-25-17/5-26-17/5-27-19/8-13-19)
<b>Wildland Fire</b>	October 31, 2016	Fast-moving grassfire near intersection of Hwy. 34 and County Road Z destroyed one residence and several outbuildings; 300 acres burned

Source: National Centers for Environmental Information (NCEI) Storm Events Database

\* According to the National Weather Service, a “bomb cyclone” is a storm with rapidly plummeting atmospheric pressure, usually when a cold air mass collides with a warm air mass.

\*\* The Coronavirus COVID-19 outbreak began in Colorado in March 2020 and was still impacting Yuma County as of the completion of updates to this document.

## History of Natural Hazard Events in Yuma County

Extreme weather events in Yuma County occasionally result in major damage to homes, businesses, utilities, agricultural operations and crops. A nine-inch downpour over two hours on May 30, 1935 damaged properties along the North Fork of the Republican River and led to the construction of the Bonny Reservoir Dam. In June 2008, flooding and severe hail caused more than \$475,000 in damages to homes, businesses and crops in Yuma County and flooding on July 3, 2010 caused more than \$30,000 in damages to county roads in the Idalia area.

Ice storms can result in extensive damage to electrical power facilities, such as in 1977 when 80% of the utility poles in the county were destroyed and again in April 2001, when 262 poles were lost at a cost of more than \$385,000.

On March 18, 2012, the ***Heartstrong Fire*** caused an evacuation of a 224-square-mile area of Yuma County, including the Town of Eckley, as wind gusts of 50-70 mph helped to spread the fire. Two homes were destroyed, three firefighters were injured, and 2,400 acres of grass and croplands were scorched. Total damage from the fire is estimated at more than \$7 million.



Left: Heartstrong Fire on March 18, 2012 (photo: Yuma Pioneer); Right: farmstead destroyed in the fire (photo: source unknown)

When the response capacity of an affected jurisdiction is exhausted by a natural disaster, a **state disaster declaration** may be issued, allowing for the provision of state assistance, usually for the purpose of covering the costs of state assets committed to response operations. Yuma County has been designated as a state-declared disaster area 13 (eight statewide declarations and five regional declarations).

**Federal disaster declarations** are granted when the magnitude and severity of impacts caused by an event surpass the ability of state and affected local governments to respond and recover. Most disaster assistance programs are supplemental and require a local cost-sharing match. Yuma County has received a major federal disaster declaration on three (3) occasions:

1. June 19, 1965 for tornadoes, severe storms and flooding (DR-200) that occurred on May 23-24, 1965 and washed out roads near the Arickaree River in southern Yuma County (Individual Assistance/Public Assistance);
2. May 17, 2001 following ice storms in April that caused extensive damage to REA-owned power lines and poles in Yuma County (Public Assistance only) and other Eastern Colorado counties (DR-1374); and
3. July 16, 2015 (DR-4229) following severe storms, tornadoes and flooding that occurred in early May 2015, causing damage to property, roads and crops (Public Assistance only).

A **USDA disaster declaration** is the most common type of federal disaster assistance and is limited to low-interest loans to farmers and ranchers to help compensate for losses due to natural hazards, including drought, freezing, hail, and insect infestations. Yuma County received 15 USDA disaster declarations between 2003-2019 for drought and other hazards.

### Section Three – Capability Assessment

**Mitigation capabilities** refer to the programs and policies currently in place to reduce hazard impacts, principally through the identification and implementation of cost-effective hazard mitigation measures. Capabilities can take the form of regulatory requirements (e.g., building codes or hazard-specific zoning ordinances), plans (e.g., hazard mitigation plans or stormwater master plans), certification programs (e.g., *Firewise* or *StormReady*), personnel (e.g., floodplain administrators and community planners), insurance (e.g., National Flood Insurance Program), and structural projects that protect critical facilities and other property.

Hazard awareness and public education programs are also proven measures for preparing citizens to cope with hazard events that cannot be avoided.

The political jurisdictions within Yuma County enforce a range of policies and regulations that support mitigation goals and principles by restricting development in areas prone to natural hazards. In most jurisdictions, the local comprehensive plan, zoning ordinance and building codes are the primary tools utilized to regulate development in hazard-prone areas. The mitigation capabilities and resources currently in place in the Participating Jurisdictions are summarized in the table below.

**Table 3.1 Mitigation Capabilities**

Capability	Yuma County	Town of Eckley	City of Wray	City of Yuma
<b>Planning and Regulatory Capabilities</b>				
Building Codes	No	No	Yes	Yes
Building Codes Year	N/A	N/A	1967	2015
BCEGS Rating	No	No	No	No
Community Rating System	No	No	No	No
Community Wildfire Protection Plan (CWPP)	Yes	Yes (FPD)	Yes (FPD)	Yes (FPD)
Comprehensive, Master or General Plan	Yes	Yes	Yes	Yes
Economic Plan	No	No	No	No
Elevation Certificates	No	N/A	Yes	No
Erosion/Sediment Control Program	No	No	No	No
Floodplain Management Plan or Ordinance	Yes	No	Yes	Yes
Flood Insurance Study (FIS)	Yes	No	Yes	No
Growth Management Ordinance	No	No	No	No
Non-Flood Hazard-Specific Ordinance	No	No	No	No
National Flood Insurance Program Participant	Yes	No	Yes	Yes
Site Plan Review Requirements	Yes	Yes	Yes	Yes
Stormwater Plan, Program or Ordinance	No	No	No	No
Zoning Ordinance	No	Yes	Yes	Yes
<b>Administrative, Financial and Technical Capabilities</b>				
Utilities Fees	No	No	Yes	No
Stormwater Service Fees	No	No	No	No
Capital Improvement Project (CIP) Funding	Yes	No	Yes	No
Community Development Block Grant Funds	No	No	No	No
Emergency Manager	Yes	Yes*	Yes*	Yes*
Floodplain Administrator	Yes	No	Yes	No
Land Use/Community Planner	Yes	No	Yes	Yes
Planner/Engineer (Construction/Development)	No	No	Yes**	No
Building Official	No	No	Yes	Yes
GIS Specialist and Capability	Yes	No	Yes	Yes
Grant Manager, Writer, or Specialist	Yes	No	Yes	Yes
Warning Systems/Services				
♦ General	Yes	Yes	Yes	Yes
♦ Flood	No	No	No	No

♦ Wildfire	No	No	No	No
♦ Tornado Sirens	No	Yes	Yes	Yes
♦ Geologic Hazards	No	No	No	No
<b>Education and Outreach</b>				
Local Citizen Groups that Communicate Risks	Yes	Yes*	Yes*	Yes*
Firewise	No	No	No	No
StormReady	Yes	Yes*	Yes*	Yes*

\* Capability provided by Yuma County

\*\* Via service contracts

## Section Four – Vulnerability Assessment

### Community Assets at Risk

This section describes the community assets at risk to natural hazards in Yuma County, including people and property; economic assets; critical facilities and infrastructure; and natural, cultural, and historic resources.

In 2019, there were a total of 1,441,012 acres in agricultural production in Yuma County (dry, irrigated, grazing and meadow hay) with a total assessed value of \$57, 907, 120. The total assessed value of residential properties in Yuma County in 2019 was \$35,254,340, an increase of 8.13% in total value from 2017. The total assessed value of commercial properties increased from \$22,552,730 in 2017 to \$27,001,470 in 2019, an 19.72% increase. Overall, the value of assessed properties in Yuma County increased 4.30% in the two-year period from 2017-2019.

**Table 4.1 Summary of Taxable Properties in Yuma County, 2017-2019**

Property Classification	2017 Assessed Value	2019 Assessed Value	% Change
Agricultural Land	\$57,052,280	\$57,907,120	1.50
Agricultural Real Estate (Buildings)	\$19,853,460	\$22,278,840	12.21
Commercial Properties	\$22,552,730	\$27,001,470	19.72
Industrial Properties	\$3,253,550	\$3,660,710	-11.12
Gas Production	\$12,482,310	\$15,872,480	27.16
Severed Minerals, Sand & Gravel	\$1,035,950	\$987,540	-4.67
Personal Property	\$32,169,120	\$27,767,280	-13.68
Residential Properties	\$32,604,360	\$35,254,340	8.13
Vacant Properties	\$1,311,850	\$1,423,580	8.52
Public Utilities	\$61,974,200	\$63,467,200	2.40
<b>Total Taxable Property</b>	<b>\$244,696,970</b>	<b>\$255,207,400</b>	<b>4.30</b>

Source: 2017 Yuma County Abstract of Assessment; 2019 Yuma County Abstract of Assessment

**Table 4.2 Summary of Taxable Properties for Municipalities, Schools and Fire Districts**

2017 Assessed Values					
Municipalities		School Districts		Fire Protection Districts	
Wray	\$19,060,300	Yuma-1	\$111,135,630	Yuma County FPD	\$117,597,080
Yuma	\$25,534,610	Wray RD-2	\$100,700,480	Yuma Rural FPD	\$77,460,530
Eckley	\$1,217,390	Idalia RD-3	\$18,235,660		
		Liberty J-4	\$16,493,860		

Source: 2019 Yuma County Abstract of Assessment



## Critical Facilities

**Critical facilities** and infrastructure are the structures and systems that are integral to day-to-day functions and, if damaged, would have serious adverse impacts on disaster response and recovery operations. Infrastructure and facilities that are commonly considered *critical* include law enforcement facilities, fire service facilities, health care facilities, government facilities, emergency operations centers, public shelters, transportation systems, water supply facilities, wastewater treatment facilities, agricultural production facilities, electrical power systems and other utilities. In addition, critical facilities are those that house vulnerable populations, such as schools and assisted living or senior housing.

Electrical power transmission and distribution systems are particularly important given the role they play in providing power to all other critical facilities, including public safety facilities, hospitals/clinics and emergency shelters, which do not always have backup generators. Critical facilities such as the substations, line-sectionalizing equipment, poles and lines owned and operated by Highline Electric Association and Y-W Electric Association are located at various locations in the communities and unincorporated areas of Yuma County. It should be noted that these facilities are particularly vulnerable to many of the natural hazards addressed in this plan.

Since 2015, several critical facilities have been built or upgraded, including a new wastewater treatment plant in the Town of Eckley, updates/additions to two high schools (Wray, Yuma) and new hemp-processing facilities.

**Table 4.3 Critical Facilities in Yuma County**

Critical Facilities	Yuma County	Eckley	Wray	Yuma
Law Enforcement Facilities	1	0	1	1
Fire Stations	8*	1	1	1
Hospitals	0	0	1	1
EMS/Ambulance Stations	2**	0	1	1
Emergency Operations Centers (EOCs)	1	0	0	0
Public Safety Communications Centers	1	0	0	0
Courthouse/City Hall/Town Hall	1	1	1	1
Schools	2***	0	3	4
Assisted Living Facilities	0	0	1	2
Wastewater Treatment	0	1	1	1
Water Utilities/Treatment	0	1	1	1
Airports	0	0	1	1

\* 8 in unincorporated Yuma County: Arnel; Hale; Idalia; Joes; Kirk; Vernon; Wages; Wauneta

\*\* Includes Idalia Ambulance service (1 station) and South Y-W Ambulance Service (1 station in Kirk)

\*\*\* Includes Idalia RJ-3 School District (1 school) and Liberty J-4 School District (1 school)

## Economic Assets

In addition to the traditionally strong crop and livestock production industries in Yuma County, the other primary sectors of the local economy with the most employees are Educational Services and Health Care.

**Table 4.4 Industry Distribution – Top Three Industrial Sectors by Jurisdiction**

Jurisdiction	Sector	Employees	% Workforce
Yuma County	1. Agriculture	1,078	28.8
	2. Educational Services/Health Care/Social Assistance	750	15.2
	3. Retail Trade	513	10.4
Eckley	1. Educational Services/Health Care/Social Assistance	34	27.0
	2. Construction	19	15.1
	3. Retail Trade	15	11.9
Wray	1. Agriculture	184	18.1
	2. Educational Services/Health Care/Social Assistance	133	13.1
	3. Arts/Entertainment/Recreation/Accommodation-Food Services	110	10.8
Yuma	1. Educational Services/Health Care/Social Assistance	374	19.9
	2. Agriculture	290	15.4
	3. Retail Trade	241	12.8

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, 2012 Survey of Business Owners

## Social Vulnerability

Certain demographic and housing characteristics are important considerations when identifying and prioritizing mitigation goals and actions. *Age* can affect the ability of individuals to safely evacuate away from hazardous conditions. *Language and cultural barriers* can affect the communication of warning information and access to post-disaster information. *Low-income residents* generally have fewer resources available for mitigation, preparedness, and recovery and are more likely to live in vulnerable structures.

**Table 4.5 Social Vulnerability Indicators from U.S. Census, 2013-2017**

Jurisdiction	Total Population	Housing Units	% Female	% Under 18 Yrs.	% 65 and Over	% Non-English at Home	Individuals Below Poverty Level (%)
Yuma County	10,109	4,489	50.4	26.9	17.6	18.1	14.3
Eckley	330	108	48.8	37.9	10.3	17.3	8.5
Wray	2,488	1,000	51.8	36.8	14.0	18.0	19.1
Yuma	3,526	1,720	53.5	17.2	24.2	26.5	12.3

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

## Historic, Cultural and Natural Resources

The National Register of Historic Places is the nation's official list of cultural resources worthy of preservation. The table below lists the properties in Yuma County that are on the National Register of Historic Places.

**Table 4.6 Historic Properties in Yuma County on the National Register**

Property	Location	Year Listed
Boggs Lumber and Hardware Building	125 N. Main St., Eckley	1985
Cliff Theater	420 Main St., Wray	2013
Lett Hotel	204 S. Ash St., Yuma	1990

<b>Walter and Anna Zion Homestead</b>	Idalia Vicinity	1992
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Source: Directory of Colorado State Register Properties

The Colorado State Register of Historic Properties is a listing of the state's significant cultural resources worthy of preservation for the future education and enjoyment of Colorado's residents and visitors. The table below lists the properties in Yuma County that are on the Colorado State Register of Historic Properties.

**Table 4.7 Historic Properties in Yuma County on the State Register**

Property	Location	Year Listed
<b>Schramm Building – Sheedy Hall</b>	200, 202, 204 S. Main St., Yuma	2009
<b>Vernon School</b>	25817 Colorado St., Vernon	2000
<b>Wray Lions Amphitheater</b>	34232 County Road JJ, Wray	2017
<b>Yuma Public Library</b>	217 S. Ash St., Yuma	1995

Source: Directory of Colorado State Register Properties

## Growth and Development Trends

Yuma County's population increased at a slow growth rate of less than one percent between 2010 and 2017. According to the State Demography Office, the population of Yuma County is forecast to be 10,083 in 2020, 10,643 in 2030, 10,870 in 2040 and 10,988 in 2050. Overall, the population growth rate for Yuma County is expected to be slow, but steady between 2020 and 2050 with a projected growth rate of 8.98 percent.

**Table 4.8 Population Growth, 2010-2017**

Jurisdiction	2010 Population	2017 Population	Percent Change
<b>Yuma County</b>	10,032	10,109	0.77
<b>Town of Eckley</b>	257	330	28.40
<b>City of Wray</b>	2,340	2,488	6.32
<b>City of Yuma</b>	3,520	3,526	0.17

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

## Vulnerability to High Priority Hazards in Yuma County

The entire population of Yuma County is more or less equally vulnerable to the high priority natural hazards identified in this plan. The vulnerability of community assets in Yuma County to high priority hazards is summarized in the following discussion.

### Blizzards and Severe Winter Storms

Winter storms will continue to occur with high frequency throughout Yuma County and occasionally cause widespread impacts. The greatest risk is to the safety of the public, including travelers on the county's highways and roads and citizens with medical conditions or other special needs that may become isolated. Highway closures and power outages can present a need to open and manage public shelters and provide mass care services. Winter storms can occasionally lead to school and business closures, road closures, and extraordinary requirements to remove snow and maintain critical emergency services.

## Drought

The most significant impacts from drought are related to water-intensive activities, such as agriculture (both crops and livestock), wildfire protection, municipal usage, commerce, recreation, and wildlife preservation, as well as water quality deterioration. Secondary impacts of drought are wildfires, wind erosion, and soil compaction that can make an area more susceptible to flooding. Drought impacts increase with the length of a drought.

Drought does not usually present life safety issues or directly impact critical infrastructures such as roads, bridges, utilities, communications systems, or public safety resources. However, drought presents ongoing challenges for all communities in Northeast Colorado and the Eastern Plains, requiring sustained planning and conservation efforts to ensure a reliable water supply to meet current and future needs.

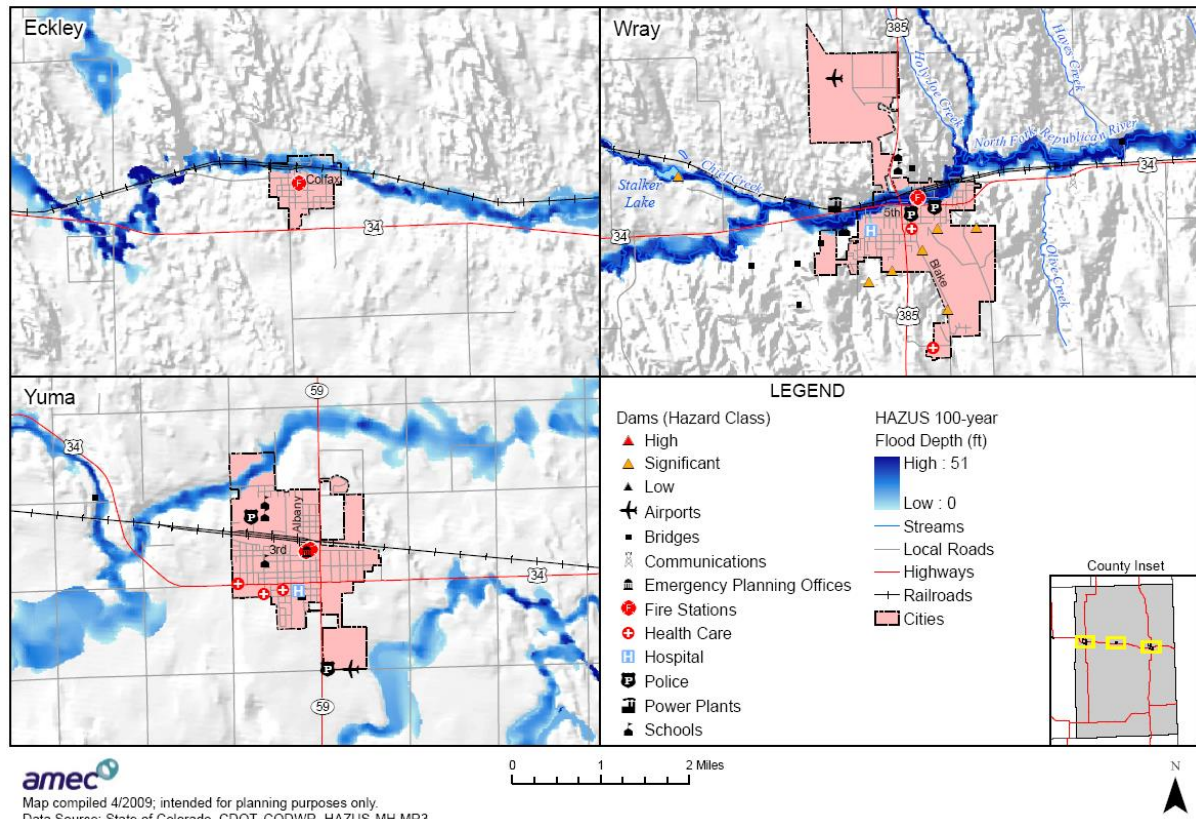
## Dust Storms

Blowing dust events are increasing in frequency in Eastern Colorado and can have wide-ranging impacts, including fatal, chain-reaction car accidents in zero-visibility conditions, serious public health problems, loss of valuable topsoil and injury to livestock. Inhalation of dust can cause direct respiratory effects in people that range from transient cough to acute fungal infection to acute respiratory failure. For farmers, wind erosion removes the small particles of organic matter, loam and clay that make soil fertile and leaves a sandy, infertile residue that can degrade the soil in one season on an unprotected field. Wind-driven tumbleweeds can pile up to the roofs of houses, blocking doors and windows and causing fire hazards.

## Flooding

The flood hazard in Yuma County is considered a **High Priority** for planning and mitigation. Bridges are the most vulnerable type of critical facility to the flood hazard in Yuma County, but other critical facilities that are potentially vulnerable to flooding include schools, fire stations, dams and natural gas facilities. High-intensity summer rainstorms can occasionally result in agricultural losses, including damage to cropland, meadow lands, fences and other farm/ranch facilities.

During the 2009 update of this plan, HAZUS-MH MR3 was used to generate the best available flood data for estimating potential losses from flood disasters. The 100-year floodplain maps generated with HAZUS-MH are provided in the figure below.



Flood events can happen anywhere in Yuma County when storms produce heavy rainfall. Flood events in Yuma County occur primarily from May through September and higher intensity rain events (3-5 inches over just a few hours) can damage highways, county roads and bridges and occasionally overwhelm municipal stormwater drainage systems, flooding streets and basements.

FEMA's Hazus-MH 4.0 loss-estimation software can be used to delineate the 100-year floodplain boundary and perform building and population risk assessments at the county and municipal levels. According to Hazus-MH 4.0 data from the 2018 Colorado Hazard Mitigation Plan, the 100-year modeled event in Yuma County would result in an estimated 124 buildings with moderate damage, zero (0) buildings destroyed, 2,611 tons of flood-generated debris, 581 displaced households, and total economic losses of \$59,480,000. The majority of these impacts would occur in the City of Wray and in unincorporated Yuma County.

Yuma County, the City of Wray and the City of Yuma participate in the National Flood Insurance Program (NFIP). As of February 29, 2020, there are eight (8) flood insurance policies in effect in Wray for a total of \$1,570,800 in coverage, four (4) policies in effect in Yuma County for a total of \$1,345,000 in coverage, and zero (0) policies in effect in the City of Yuma. Three (3) claims for losses have been filed and two were approved for a paid total of \$3,298. Flood maps for all three communities are dated 1985 and there are no repetitive loss properties or severe repetitive loss properties in Yuma County.

According to the Colorado Water Conservation Board (CWCB), there is one repetitive loss property located in Yuma County, a single-family residence that sustained two losses (once in 2008 and 2014) for a total of \$3,297.92. A *repetitive loss property* is one for which two or more



claims of at least \$1,000 have been paid by the NFIP within any 10-year period for flood losses since 1978. A *severe repetitive loss property* is a property that has had four or more claims of more than \$5,000, or 2-3 claims that cumulatively exceed the value of the property. There are no Severe Repetitive Loss Properties located within Yuma County.

The risk of serious flooding from dam failure in Yuma County is low. There is one High Hazard (Class I) dam in the county (Bonny Dam) and there are no communities in Yuma County that are downstream of a High Hazard dam located in another county. All Significant (Class II) dams in Yuma County are routinely inspected and have current Emergency Action Plans (EAPs).

Construction of the Bonny Dam was completed in 1951 as a flood control project, but was drained in 2011 as part of the State of Colorado's compliance with the 1943 Republican River Compact with Kansas and Nebraska. Although water in the South Fork of the Republican River currently bypasses the dam, the structure can still be used for flood control if needed and the U.S. Bureau of Reclamation continues to conduct regular emergency exercises at the dam.

**Tables 4.9 and 4.10 Jurisdictional Dams in Yuma County**

Dam Name	Hazard Class	Year	Stream	Downstream Community	Miles*
Bonny	High	1951	S. Fork Republican R.	Hale	1
Duck	Low	1954	Arikaree River	Benkelman, NE	46
Chief Creek #4	Significant	1956	Chief Creek	Wray	2
Chester Wieser EC #1	Low	1975	North Sand Creek	Hale	5
Hanshaw	Low	1900	N. Fork Republican R.	Benkelman, NE	32
Wray Watershed District #1	Significant	1958	N. Fork Republican R.	Wray	0
Wray Watershed District #2	Significant	1958	N. Fork Republican R.	Wray	0
Wray Watershed District #3	Significant	1957	N. Fork Republican R.	Wray	1
Wray Watershed District #4	Significant	1958	N. Fork Republican R.	Wray	1
Wray Watershed District #5	Significant	1958	N. Fork Republican R.	Wray	1
Wray Watershed District #6	Significant	1958	N. Fork Republican R.	Wray	1

Source: Colorado Division of Water Resources

NPH = No Public Hazard

\* Distance to nearest downstream community

Dam Name	EAP	Storage (Acre Feet)	Owner
Bonny	2017	41,342*	U.S. Bureau of Reclamation
Duck	NR	25	Doris Whomble
Chief Creek #4	2016	143	Colorado Parks and Wildlife
Chester Wieser EC #1	NR	87	Dean Wieser
Hanshaw	NR	26	AB Company
Wray Watershed District #1	2018	63	City of Wray
Wray Watershed District #2	2018	16	City of Wray
Wray Watershed District #3	2018	39	City of Wray
Wray Watershed District #4	2018	69	City of Wray
Wray Watershed District #5	2018	27	City of Wray
Wray Watershed District #6	2018	190	City of Wray

Source: Colorado Division of Water Resources

EAP = Emergency Action Plan      NR = Not Required

\*Designed storage for Bonny Dam; reservoir was drained in 2011 and is currently mostly dry.

## **Hailstorms**

Hail is primarily a risk to property and agriculture activities -- vehicles, roofs, crops and landscaping are the property most commonly damaged by hail. However, large hail can also cause death or injury to people caught outside and exposed to the elements. Although large hail events frequently result in high aggregate insured losses, property damages are generally limited, serious injuries are rare, and there is typically little or no impact to critical facilities, which are generally able to operate without disruption to services.

## **Pandemic**

Older adults and individuals with serious chronic health conditions are most at risk for becoming very ill or dying from a serious respiratory virus like COVID-19 and other novel virus infections. In eastern and northeastern Colorado, the population skews to the older side of the state average (approximately 2-8 years older per capita, depending on the county) and residents with underlying health problems have less access to the health care services they need.

With fewer people and wide-open spaces, rural Colorado provides a natural social-distancing environment. However, rural residents still tend to congregate in common places where diseases can be passed from person-to-person, including schools, churches, grocery stores and post offices. Communities located along interstate highways may be more susceptible to exposure from the traveling public, including truck drivers from all parts of the country. Large rural employers, including packing plants, feedlots, grain elevators, and confined livestock operations as well as prisons, can also be prime locations for rapid virus transmission, as was experienced during the COVID-19 crisis at the Cargill meatpacking plant in Morgan County and the Sterling Correctional Facility in Logan County. Sadly, nursing home and assisted living facility residents have been the most vulnerable citizens to the highly contagious COVID-19 virus, due to their age, underlying health issues and congregate living setting.

Although most individuals who contract COVID-19 do not become seriously ill, persons with mild symptoms and asymptomatic COVID-19 illness can still place other vulnerable members of the public at significant risk. A large surge in the number of persons with serious infections can overwhelm local hospitals and clinics and compromise the ability of the health care system to deliver necessary health care to the public.<sup>1</sup> Most rural hospitals are not as equipped as larger hospital systems and many face significant health care workforce shortages on a normal basis, meaning patients in a pandemic may need to be transferred to larger hospitals or cared for in an unconventional, alternate setting. Other challenges to small town hospitals posed by a pandemic include limited inpatient and intensive care beds, disadvantages in competing for critical equipment and supplies, and loss of revenue from cancellation of elective procedures.

The drawn-out nature of a pandemic also places additional strain on EMS, fire and other response resources that rely heavily on volunteers, who together with their families already face greater exposure to the virus and a higher risk of infection. Every community in eastern and northeastern Colorado depends on volunteers to provide fire, EMS and ambulance services.

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<sup>1</sup> Colorado Department of Public Health and Environment, covid19.colorado.gov.

In addition to the loss of life and human suffering caused by COVID-19, the pandemic is expected to have an extensive negative effect on the global economy for years to come, with substantial drops in Gross Domestic Product (GDP) accompanied by extraordinary increases in unemployment in the U.S. and around the world.

COVID-19 presents a number of challenges for farmers and ranchers in Colorado, including (1) uncertain impacts on markets and farm prices, (2) supply chain shortages and slowdowns, (3) health impacts to the farm-ranch workforce, and (4) potential shortages of safety gear such as protective gloves and N-95 masks due to their critical need by health care workers.<sup>2</sup> If large hog-packing plants in Oklahoma, Kansas or Texas had to shut down due to the spread of a virus through their workforce, agricultural COOPs and commercial hog farms in northeastern Colorado could be affected by the supply chain disruptions that would be created. In a worst-case scenario, local hog farms would have to depopulate animals because there would be no place to ship them for processing.

The Centers for Disease Control and Prevention (CDC) recommends community mitigation strategies such as social distancing measures to limit spread of the virus. A community mitigation strategy is a set of actions that individuals and communities can take to help slow the spread of respiratory virus infections. Community mitigation is especially important before a vaccine or drug becomes widely available. Community mitigation aims to slow the spread of a novel influenza virus and protect health care and critical infrastructure workers through the use of nonpharmaceutical interventions (NPIs). NPIs are readily available actions and response measures that people can take including staying at home, covering coughs and sneezes, frequent handwashing and routine cleaning of frequently touched surfaces.

Community-level NPIs help reduce social contacts between people in schools, workplaces, and other community settings by dismissing schools temporarily, providing telework options, postponing large gatherings and issuing public health orders. A community mitigation strategy outlines recommended actions that can be taken by individuals/families at home, schools and childcare facilities, assisted living facilities, workplaces, health care facilities, and community- and faith-based organizations.<sup>3</sup>

### **Tornadoes and Straight-Line Winds**

According to the National Storm Events Database, there have been 87 confirmed tornado events in Yuma County since 1950. Most of these tornadoes were small (Fo/EFo) and occurred over open country; however, F1 and F2-scale tornadoes have occurred in Yuma County from time to time and can cause considerable damage. In 1971, an F2 tornado destroyed seven mobile homes and five businesses in Wray and injured nine people. The event resulted in \$2.5 million in damages. Fortunately, there have been no fatalities in Yuma County as a result of tornadoes.

Straight-line wind events occur more frequently than tornadoes in Yuma County and cause at least as much damage. It is often difficult to tell whether storm damage was a result of a tornado or severe winds. During blizzards, straight-line winds magnify the dangerous effects of cold temperatures and impede safe travel by reducing visibility. Prolonged power outages can result

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<sup>2</sup> Colorado Farm Bureau, [coloradofarmbureau.com](http://coloradofarmbureau.com).

<sup>3</sup> *Implementation of Mitigation Strategies for Communities with Local COVID-19 Transmission*. March 12, 2020. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, [www.cdc.gov/COVID19](http://www.cdc.gov/COVID19).

when power lines are brought down by a combination ice buildup on the lines and strong winds. During dry periods, high winds can contribute to rapid fire growth in open spaces and other areas where natural grasses can grow tall and ultimately cure. High winds can also damage roofs and structures and cause secondary damages as a result of flying debris.

### **Wildland/Grassland Fires**

According to the Yuma County Community Wildfire Protection Plan (2011) all areas of Yuma County are subject to the risk of wildfire, including non-irrigated pastureland, harvested dry land crop areas (corn stalks and wheat stubble) and natural grassland areas (e.g., land enrolled in the Conservation Reserve Program, or CRP). Wildfires in these areas are typically caused by severe weather events (lightning) and tend to spread rapidly. The greatest risk exists during severe weather season (spring/summer months), when cloud-to-ground lightning is common. Fall is also considered a high-risk time as crops have matured and are drying out in the fields and harvesting is in progress. Most controlled burns by property owners are conducted in the Spring.

The conditions that lead to extreme wildfire behavior are high winds, high temperatures, low relative humidity and dry ignitable fuels. Wind-driven fire events present serious challenges for rural fire protection districts, including (a) distance and access to many rural locations; (b) difficulty establishing buffers and zone boundaries; (c) short time available to conduct timely evacuations; and (d) potential manpower/resource limits with volunteer fire organizations.

## **Section Five – Mitigation Strategy**

This section describes the **Mitigation Strategy** developed by Yuma County, based on the assessment of risks and vulnerable community assets that was updated at the planning workshop and through survey feedback and interviews with local officials. The Mitigation Strategy includes Mitigation Actions for reducing local risks and accomplishing the following goals:

1. Reduce Loss of Life, Property Damages, and Economic Impacts Caused by Natural Hazard Events
2. Improve County-Level Capabilities to Reduce Disaster Losses
3. Increase Public Awareness of Potential Hazard Impacts
4. Improve preparedness for future pandemic events by collaborating with government, business, education, medical and public health partners on plans that address identified lessons learned from the COVID-19 public health disaster on a local, region and state level.
5. Maintain FEMA Eligibility and Qualify Participating Communities for Federal Mitigation Funding.

### **Mitigation Achievements, 2015-2020**

Since 2015, significant progress has been made with implementation of the Mitigation Actions recommended in the previous plan, including completion of the following initiatives:

- 1) acquisition of GIS equipment/software and **development of GIS capabilities** to support local and inter-agency planning, coordination and response operations;
- 2) a one-day flood and tornado **recovery/mitigation exercise** as an awareness tool for local officials in the City of Wray; and

- 3) installation of **backup emergency generators at three facilities that are designated emergency public shelters** by the American Red Cross (Eckley Community Center, Laird School and Vernon School).

Most of the 2015 Mitigation Actions are ongoing projects that are making progress and are worthy of retaining in the updated plan. At the planning workshop, participants reviewed the status of 2015 projects and determined which incomplete actions to retain in the updated plan. Table 5.1 below provides a report on the status of Mitigation Actions identified in the previous 2015 version of this plan.

**Table 5.1 Status of 2015 Mitigation Actions**

Yuma County			
#	2015 Mitigation Actions	Responsible Agency	Status
1	Promote the benefits of tornado shelters, particularly in manufactured housing parks.	OEM	Ongoing
2	Provide refresher training for lenders and insurance agencies regarding the NFIP and publicize and promote the purchase of flood insurance for flood-prone properties.	OEM, Wray City Manager/Council	Incomplete; retain in updated plan
3	Conduct a one-day flood and tornado recovery/mitigation exercise as an awareness tool for local officials.	Wray City Manager, OEM, Colorado Water Conservation Board	Complete
4	Educate citizens concerning cellular reverse 911 calls and procedures for registration.	WY Communications Center, OEM	Ongoing
5	Discourage controlled burns during Red Flag Warnings and continue to emphasize the importance of reporting agricultural burns to the WY Communications Center.	WY Communications Center, OEM	Ongoing
6	Strengthen development planning policies in the City of Wray regarding drainage improvements and flood mitigation.	Wray City Manager	Ongoing
7	Complete electrical pre-wiring (i.e., hook-ups, switch over panels) at designated shelters to accommodate portable generators for emergency back-up power.	OEM	Complete
8	Acquire GIS equipment/software to improve local and inter-agency planning, coordination and response capabilities.	Yuma County GIS	Complete/well-developed and growing (County Administrator)
9	Develop a training program and exercise plan to enhance coordination between local ambulance crews and surrounding EMS agencies in mass-casualty events.	Yuma County EMS Council	Ongoing

### 2020-2025 Mitigation Actions

The evaluation and prioritization of proposed 2020 Mitigation Actions were based on the updated risk assessment (i.e., probability and magnitude of impacts for each hazard), significant events from the last five years, and the informed judgement of local officials who weighed the pros and cons of proposed actions based on their subject matter expertise and experience with local hazards. The STAPLEE evaluation tool was considered as an additional method for evaluating the effectiveness of each action item. STAPLEE considers social, technical, administrative, political, legal, economic, and environmental constraints and benefits of each proposed activity.



Mitigation Actions 1-8 in the table below are new and ongoing initiatives that address the vulnerability of communities and critical facilities to the types of severe hazard events experienced in Yuma County in the last five years. Most of these proposed actions are intended to address all of the high priority natural hazards identified in this County Planning Element. Mitigation Action 9 is a new initiative to improve coordination and collaboration between Yuma County and the owners and operators of the only Class I (High Hazard) dam in Yuma County. Mitigation Action 10 is intended to help Yuma County and its local partners reduce the impacts to public health from future pandemic events like the 2020 COVID-19 crisis.

Ongoing actions from the 2015 plan and proposed new mitigation actions were rated as High or Medium priority (actions considered low priority are not included in the update of this plan). The results of this effort are summarized in the table below, including a description of each mitigation action, timeframe for completion, estimated cost, priority, and the entity or entities responsible for implementing the action.

**Table 5.2 Mitigation Actions 2020-2025**

Yuma County					
#	Proposed Mitigation Actions	Timeframe	Estimated Cost	Responsible Agency	Priority
1	Continue to participate in the National Flood Insurance Program (NFIP) by enforcing local floodplain regulations and implementing or improving upon effective floodplain and stormwater management practices.	Ongoing	Staff Time	Yuma County, City of Wray, City of Yuma	High
2	Promote the benefits of tornado shelters and safe rooms, particularly in manufactured housing parks.	Ongoing	Staff Time	OEM	High
3	Provide refresher training for lenders and insurance agencies regarding the NFIP and publicize and promote the purchase of flood insurance for flood-prone properties.	Next 5 Years	Staff Time	OEM, Wray City Manager/Council	High
4	Conduct a follow-up, one-day flood and tornado recovery/mitigation exercise to continue hazard awareness training for local officials.	Next 5 Years	Staff Time	Wray City Manager, OEM, Colorado Water Conservation Board	Medium
5	Educate citizens concerning cellular reverse 911 calls and procedures for registration.	Ongoing	Staff Time	WY Communications Center, OEM	High
6	Discourage controlled burns during Red Flag Warnings and continue to emphasize the importance of reporting agricultural burns to the WY Communications Center.	Ongoing	Staff Time	WY Communications Center, OEM	High
7	Strengthen development planning policies in the City of Wray regarding drainage improvements and flood mitigation.	Ongoing	Staff Time	Wray City Manager	High
8	Develop a training program and exercise plan to enhance coordination between local ambulance crews and surrounding EMS agencies in mass-casualty events.	Next 5 Years	Staff Time (Multiple Agencies)	Yuma County EMS Council	High

9	Participate in Functional Exercise of the Bonny Dam, the only Class I dam in Yuma County, and assist with revisions and updates to the Bonny Dam Emergency Action Plan (EAP).	2021	Staff Time (Multiple Agencies)	Yuma County Sheriff, OEM, U.S. Bureau of Reclamation	Medium
10	Develop public education guidelines for communicating with the public during a pandemic that: (1) ensures information is timely, accurate and coordinated, (2) addresses the needs of non-English speaking residents, and (3) includes provisions for addressing rumors, misinformation and public perceptions of risk.	Next 5 Years	Staff Time (Multiple Agencies)	OEM with EMS, Public Health and Medical Services Partners	High

**Table 5.3 Mitigation Actions that Address High Priority Hazards**

The table below identifies the potential mitigation benefits of new mitigation actions with respect to the **high priority hazards** identified in this County Plan Element.

Yuma County			
#	New Mitigation Actions (2020-2025)	High Priority Hazards Addressed	Potential Benefits of New Mitigation Actions
1	Continue to participate in the National Flood Insurance Program (NFIP).	Flooding	Ongoing NFIP compliance through continued enforcement of local floodplain regulations and implementation of effective floodplain and stormwater management practices.
2	Promote the benefits of tornado shelters and safe rooms, particularly in manufactured housing parks.	Tornadoes/straight-line winds	Protection of life and safety for residents that install safe rooms on their properties.
3	Provide refresher training for lenders and insurance agencies regarding the NFIP.	Flooding	Opportunity to educate lenders and publicize/promote the purchase of flood insurance for flood-prone properties.
4	Conduct a one-day flood and tornado recovery/mitigation exercise to continue hazard awareness training for local officials.	Flooding; tornadoes/straight-line winds	Improved flood and tornado preparedness for local officials in the City of Wray.
5	Educate citizens concerning cellular reverse 911 calls and procedures for registration.	Flooding; tornadoes/straight-line winds; wildland/grassland fires	Enhanced capability to notify the public about natural hazard events and other emergencies.
6	Discourage controlled burns during Red Flag Warnings and continue to emphasize the importance of reporting agricultural burns to the WY Communications Center.	Wildland/grassland fires	Improved collaboration between farmers/ranchers and public safety agencies to recognize critical fire weather conditions and prevent grassland fires.
7	Strengthen development planning policies in the City of Wray regarding drainage improvements and flood mitigation.	Flooding	Refined development review process to improve identification of stormwater runoff issues and mitigation measures associated with new development.
8	Develop a training program and exercise plan for dispatching local and regional EMS teams to mass-	Flooding; tornadoes/straight-line	Enhanced coordination between local ambulance crews and surrounding EMS agencies in mass-casualty events.

	casualty events in Yuma County and NE Colorado, in cooperation with local, state and federal EMS organizations.	winds; wildland/grassland fires	
9	Participate in Functional Exercise of the Bonny Dam and assist with revisions and updates to the Bonny Dam Emergency Action Plan (EAP).	Flooding	Improved coordination with the owners and operators of the only Class I dam in Yuma County (U.S. Bureau of Reclamation).
10	Develop public education guidelines for communicating with the public during a pandemic.	Pandemic	Improved capacity for ensuring public information is timely, accurate and coordinated; addresses the needs of non-English speaking residents; and includes provisions for addressing rumors, misinformation and public perceptions of risk.

The Yuma County Hazard Mitigation Planning Committee reviewed and discussed all available, cost-effective possible actions for mitigating high priority hazards in the process of developing this mitigation strategy. For the current update of this plan, mitigation actions that specifically target blizzards, drought, dust storms and hailstorms were not identified or included, due to prohibitive costs, project viability, lack of political support, or lack of available local government staff to carry out tasks associated with implementation.

During annual reviews of the Yuma County Plan Element, the Hazard Mitigation Planning Committee will discuss new initiatives that come to light or other opportunities for implementing the mitigation actions identified in this plan. Potential resources that can be leveraged in the future to support mitigation actions that address all high priority hazards include government grants, tax incentives, private donations, volunteer resources, new university/scientific research applications, and new information about best hazard mitigation practices.

## **Section Six – Maintaining and Updating the County Plan Element**

### **Formal Plan Adoption**

In accordance with protocols established by the Colorado Division of Homeland Security & Emergency Management (CDHSEM), the final draft of this updated plan is submitted to CDHSEM for state-level review and recommended changes prior to FEMA review. FEMA then reviews the plan and, pending any required changes, issues a notice that the plan is Approvable Pending Adoption (APA) by the governing body of each participating jurisdiction. According to CDHSEM requirements, the plan must be formally adopted by participating jurisdictions within eight months of receiving notice of FEMA APA status.

### **Plan Maintenance**

Regular maintenance of this plan will help maintain a focus on hazards that pose the greatest risks and on the recommended measures for reducing future potential hazard losses. The Yuma County Emergency Manager will serve as the primary point of contact and will coordinate all local efforts to monitor, evaluate, and update this plan. Participating jurisdictions and individual departments are responsible for implementing their specific mitigation actions and reporting on the status of these actions to the Emergency Manager.

Plan maintenance involves an ongoing effort to monitor and evaluate the implementation of identified action items in the plan, and to update the plan as progress, opportunities, obstacles, or changing circumstances are encountered. At least once a year, the Emergency Manager will convene a meeting to review new hazards data or studies, discuss new capabilities or changes in capabilities, consider any input received from the public, evaluate the effectiveness of existing mitigation actions, and modify or add mitigation actions. In order to ensure transparency in the planning process and promote continued public involvement, these meetings will be open to the public with advance notice provided through relevant websites, social media or news releases.

### **Incorporation of Mitigation Strategy into Other Plans and Programs**

Mitigation is most successful when it is incorporated within the day-to-day operations of land use planning, road and bridge/public works, public health and other mainstream functions of local government. Multi-objective projects that mutually benefit partners and stakeholders are usually more cost-effective and more-broadly supported. Many other local plans present opportunities to address hazard mitigation in a way that can support multiple community objectives.

Ideally, identified mitigation actions should be implemented through existing plans and policies, which already have support from the community and policy makers. The incorporation of elements of this plan into existing planning mechanisms requires coordination between the Emergency Manager and the staff of each department responsible for implementing specific mitigation actions. The Emergency Manager, with support and guidance from Participating Jurisdictions, will work with the responsible agencies to incorporate this County Plan Element into existing planning mechanisms.